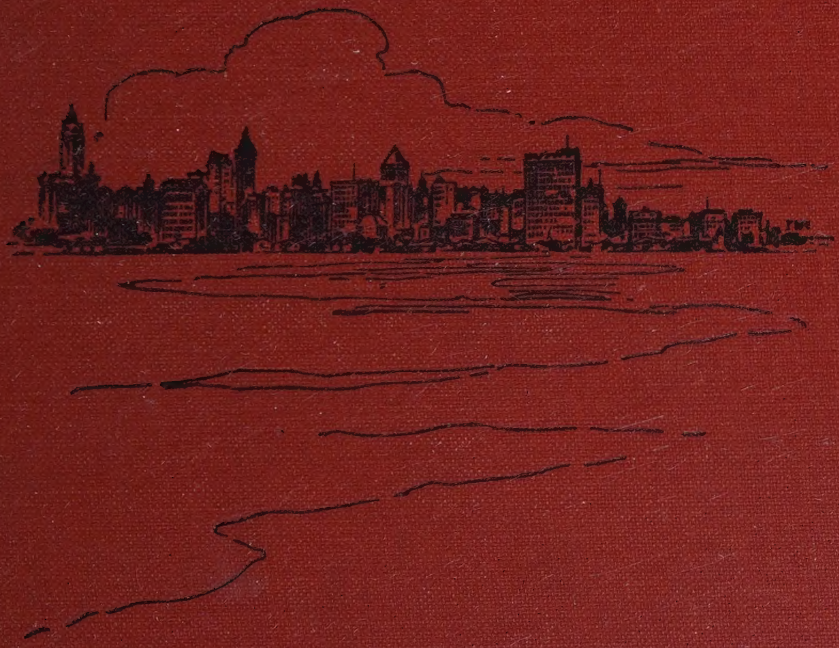
REPRESENTATIVE CITIES OF THE UNITED STATES



CAROLINE W. HOTCHKISS

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THE SKY-SCRAPERS OF NEW YORK

Compare with the illustrations on pages 190 and 191.

REPRESENTATIVE CITIES OF THE UNITED STATES

A GEOGRAPHICAL AND INDUSTRIAL READER

BY

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HOUGHTON MIFFLIN COMPANY

BOSTON · NEW YORK · CHICAGO · DALLAS · SAN FRANCISCO

The Riverside Press Cambridge

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The Riverside Press
CAMBRIDGE . MASSACHUSETTS
PRINTED IN THE U . S . A

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TO THE TEACHER

THE purpose of these studies in the geography of cities is to offer to boys and girls in the grammar grades a fresh point of view for the final study of the United States. Each of these Representative Cities is a center of the industries and life of a section, and the cities have been selected with a view of covering in a general way the chief sections of the United States. Many important cities have been omitted, either because their location and development offer no points that have not already been covered, or because the selected cities allow a more picturesque and vivid treatment.

The author believes that the best results will follow from studying the cities in the order given, though the arrangement is such that the book can be used effectively with any prescribed course of study. The exercises are based upon many years' experience in the schoolroom. They call for a faithful study of maps, they constantly relate the distant to the home environment, and they keep before the youthful learner by continued comparisons the relation of each center to the world at large. It is not to be expected that all the pupils of a class shall work out all the exercises of each chapter; on the contrary, the number of exercises

1918

provided makes it possible to choose as the interests of teacher and pupil or the ability of the pupils shall direct. Outline maps should be used unsparingly. Information as to where they may be obtained will be found in the Appendix.

The author acknowledges with thanks the courtesy of Professor R. H. Whitbeck, of the University of Wisconsin, for allowing certain statements of his to be used in the "Rules Governing the Location of Cities."

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TO THE PUPIL

IN the study of arithmetic and spelling you have been obliged to learn certain rules in spite of the fact that they were hard and distasteful to you. No doubt you have found that their mastery has more than once helped you to solve a problem or spell a difficult word. That is the reason they were given you to learn and, if you live long enough, you will be grateful to those teachers who insisted most rigidly on your accomplishing your task. In the same way there are rules in geography, though they are not as dry as those in arithmetic or spelling. By their help you will be able to straighten out many a perplexing problem beginning with *why* or *how*. A few of these rules that have to do with the location of cities have been placed at the end of the last chapter. They will help you to see the reasons for the location and growth of nearly all cities, and the exercises based on them will put you in possession of much important geographical knowledge.

REPRESENTATIVE CITIES OF THE UNITED STATES

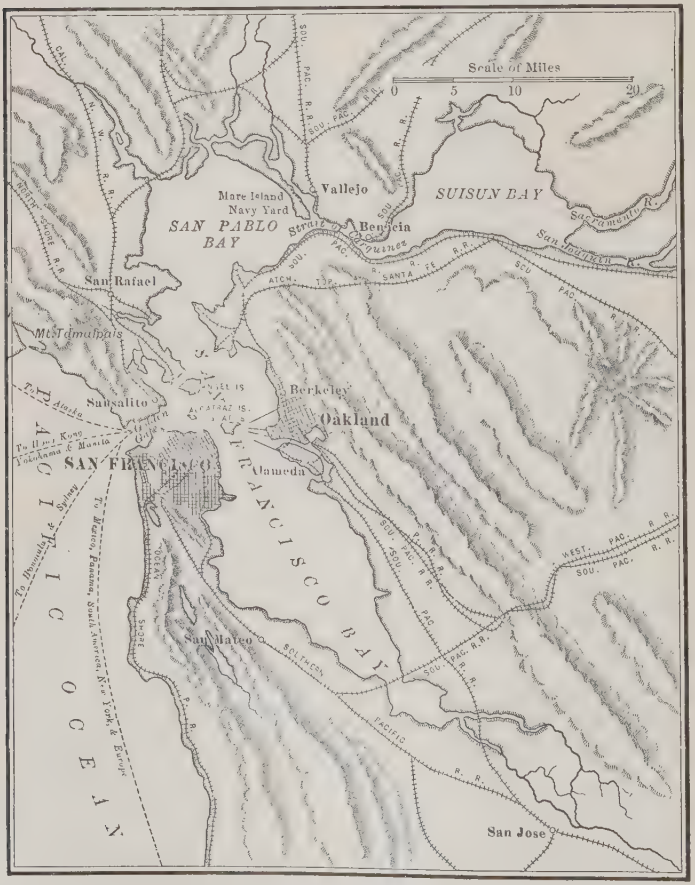
SAN FRANCISCO

She shall sit at the gates of the world,
Where nations shall gather and meet,
And the East and the West at Her bidding,
Shall lie in a leash at Her feet.

S. J. ALEXANDER.

ONE of the first things boys and girls discover as they study geography is that many of the great world cities are situated on deep bays or near the mouths of navigable rivers. But did you ever stop to think that such a favorable location alone would never account for the growth of such big cities as New York or London or Shanghai? No matter how deep or spacious the harbor, if the country back of the coast is desert or barren no large city is likely to grow up there. If, however, the navigable river leads to a back country or *Hinterland*, as the Germans call it, rich in mineral or agricultural wealth, industries and commerce flourish. Behind New York is the hinterland of the Mohawk Valley and the Middle West; Shanghai is the outlet for rich plains of the Yang-tse River; so in a similar way it is the California Valley that has built up San

Francisco. Though a settlement was made in 1776 near the present site of the city, it remained a miserable little place until the discovery of gold in the Sacramento Valley in 1848, after which



SAN FRANCISCO AND VICINITY

Note the piers built out from the Oakland shore, to shorten the ferriage to San Francisco.

almost in a day it grew into the proportions of a city.

But it was the Bay that first called San Francisco into being, and well it might, for it is one of the most magnificent harbors in the world and, excepting San Diego, the only commodious one on the Pacific Coast of the United States south of Puget Sound. In the summer of 1776, while stirring events were happening around Boston, the Spaniards established a *presidio* or fortified camp on the tip of the peninsula which separates San Francisco Bay from the Pacific Ocean, and near it founded a mission. This presidio, together with those at San Diego, Santa Barbara, and Monterey, was intended to show the adventurous Russians, who were prowling along the Alaskan coast, that Spain would have to be reckoned with if they came any nearer. The little mission was one of many planted in California by the Spanish missionary Father Junípero Serra, the Bay and later the city

MISSION DOLORES

Note the open belfries of the mission, and the semi-tropical vegetation.

receiving the name of St. Francis, the founder of the religious order to which the good missionary belonged.

The Bay is the glory and pride of the city. Its spacious land-locked harbor, surrounded by hills and mountains, with a strait nearly a mile wide leading to the ocean, and water so deep that ships can enter and leave at all tides, must have fired the imagination of the first Spanish commander who sailed into it, for in his report to Father Serra he exclaims, "A multitude of harbors wherein all the navies of Spain can play at hide-and-seek." Alas for the navies of Spain, they have melted away; but through the Golden Gate which faces the sunset sky flock in ships from the great circle of the Pacific. What rich cargoes they bring from lands that have for centuries supplied the West with the luxuries of the East! Think of the voyages taken and the lives lost to bring the Far East near to the youthful eager West! Now the United States has pierced the last barrier that divided the hemispheres by building the Panama Canal. Through this canal flows a great east-west tide of commerce which does much to unite the East and West into one great family of understanding and sympathy.

A walk along the water front at San Francisco will enable us to imagine some of the cargoes that are entering and leaving that port. At the wharves of the Pacific Mail Steamship Company

A PACIFIC LINER AT THE DOCKS IN SAN FRANCISCO
Note the sacks of wheat ready for loading.

lies a steamer from Honolulu, discharging sugar, rice, bananas, coffee, and honey. Perhaps the Nippon Maru, a Japanese liner, is due; it has in its hold chests of tea, bales of silk, bags of sulphur to use in the drying of fruit, porcelain, embroideries, and matting. Much of this valuable cargo will be hurried to the transcontinental railroads and distributed among the cities of the Middle West and the Atlantic Coast. At one of the wharves lies a product of the steel mills of Pennsylvania, —heavy rails to be laid down on the steep hills of San Francisco. They came by a roundabout but cheaper route than overland; to Mexico by water, across the Isthmus of Tehuantepec by rail, and again by coasting steamer. Smaller vessels do the coasting trade. In April, ships bound for Alaska load with tin cans and laborers for the fish canneries, and passenger steamers arrive and depart many times a week for Los Angeles and the cities of the Northwest. The accompanying

shipping list from the San Francisco *Daily Chronicle* shows the number of vessels arriving in a week. It will not be difficult for you to determine the cargo each will bring and to locate the port from which the ship sails.

MOVEMENTS OF STEAMERS
To Arrive

From	*Date*
Los Angeles, San Diego,	Oct. 14
Manila,	Oct. 14
Hong Kong,	Oct. 14
Portland, Astoria,	Oct 14
San Pedro,	Oct 14
Honolulu,	Oct. 15
Salina Cruz,	Oct. 16
Seattle, Tacoma,	Oct. 16
Balboa,	Oct 17
New York *via* Ancon,	Oct. 18
Hamburg and Way Ports,	Oct. 19

Besides the foreign commerce of the Bay there is the enormous daily traffic on its waters. The location of San Francisco is such that only one of the transcontinental railroads can land its passengers and freight directly in the city; this is the branch of the Southern Pacific that follows the coast north from Los Angeles. All the others, the Santa Fé, the Central and Western Pacific, and the main line of the Southern Pacific, must transfer their loads to ferryboats at Oakland and other points on the eastern shore of the Bay. Thus has been built up the best ferry service in the world, all lines converging at the commodious Ferry House at the foot of Market Street. In Oakland, Alameda, and Berkeley, live many thousands who go to San Francisco every day for business or pleasure. The ferries between these points and San Francisco carry over one hundred thousand passengers daily. Those of us who live inland may envy these people their morning and

evening sail, for nowhere in the world, it is said, are there more gorgeous sunsets, and one who has seen the evening colors bathing sea, sky, and mountains in gold and opal tints cannot wonder at the enthusiasm the scene arouses. Even when the ocean fog creeps in through the "keyhole" it is still beautiful, and the gulls are always there, in fair weather or foul, flying close to the boats and perching unconcernedly on the piers while the ferryboats pass in and out of the slips.

Into the Bay, with its shore line of two hundred miles, empty two rivers, each reaching into the heart of a fertile valley, — the Sacramento, navigable to the city of Sacramento, the San Joaquin, to Stockton. Broad stern-wheel steamers ply up and down the river, exchanging hay and garden produce for groceries, hardware, and other necessaries from the Bay cities. This central valley, the rich hinterland of San Francisco, will some day support a dense population. It is very young compared with the populous valleys of the Ganges and the Rhine, for it has been settled barely half a century; yet during 1910 its oil wells produced 74,000,000 barrels of oil, its harvests yielded almonds, walnuts, cherries, strawberries, loganberries, figs, grapes, raisins, prunes, lemons, oranges, olives, melons, sugar beets, asparagus, celery, the mealy Burbank potato, honey, cheese, butter, eggs, hay, hops, and grain, and from the slopes of the Sierras came over $18,000,000 worth of gold. Few

valleys in the world can surpass the Valley of California in variety of products; and this is but a partial list of its resources. Already electricity, generated by the mountain streams, lights the streets of San Francisco and operates the cars in Oakland and many a smaller town. The tall poles, with their yardarms and insulators marching in

LOOKING OVER THE CITY AND BAY
Note the tower of the Ferry House and the islands.

endless procession across the flat valley floor, show how man has learned to use the forces of nature for his own needs; none the less convincing are the aqueducts and the irrigating canals which bring life from the mountains to the parched valleys.

The traveler who approaches San Francisco by water is thrilled by the thought that he is draw-

ing near one of the world's great cities, so commanding is its position, so beautiful its surroundings. He looks with astonishment at the massive buildings that crowd the lower portions of the city. Where are the wind-blown sand hills among which the gold-seekers pitched their tents threescore years ago? Succeeding generations have

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FROM NOB HILL

thrown them into the sea, and filled up the marshes to make room for the skyscrapers so necessary to modern business. Where are the ruins of the great fire? You will have to search diligently to find them. It is the wonder of the age that the new San Francisco has arisen so quickly on the ashes of the old. Back of the level business portion of the city rise the steep rocky hills that fairly

astonish one who sees them for the first time. On Nob Hill, Telegraph Hill, Russian Hill, and all the others rise, tier above tier, splendid hotels, shops, schools, churches, and inviting homes. It is slow work climbing up these steep grades, and the descent is not so easy as one would think. Most people prefer to use the pretty little cable cars that crawl steadily up and down "like flies on a window pane." Even the houses have to climb; no two are on the same level, but each one gets a view of the Bay with its islands and shipping, or of Mount Tamalpais or distant Mount Diablo.

Photo. by G. Moulin.

A STREET IN THE BUSINESS SECTION

San Francisco is a treeless city, but the lack of shade is not noticed as it would be elsewhere. The cool breezes that sweep in from the ocean so temper the summer heat that the sunny side of the street is often preferable. It is, however, a city

of brilliant color; the eye is dazzled by the flowers that are everywhere. Heliotrope and fuchsias climb up the porches; daisies, white and yellow, grow in masses in garden beds; and roses bloom nearly all the year. The air is so clear owing to the absence of moisture that things do not grow bedraggled and dingy; there are gorgeous red geraniums banked against gray walls; and from the gilded roofs of the Chinese bazaars bright streamers with picturesque Oriental figures wave gayly in the breeze.

THE ENTRANCE TO CHINATOWN

And what of the people who live amid these surroundings? All nations of the world are drawn to the city at the Western Gate; Chinese, Japanese, Italians, French, German, Swiss, Mexican, Russian, English, American, each finds his own speech and customs, though the children of the foreign folk grow rapidly into ardent Americans. In the

Oriental School Chinese girls in their native garb — pretty silk or cotton trousers and long blouses — swing on trapeze or "giant stride" with all the energy of American girls, and the boys read *The Lady of the Lake*, apparently appreciating the story, if not the author's art in telling it. The children in Little Italy, with their bright black eyes and roguish faces, adopt our ways before they can speak our language; and though some of the other nations may be slower in acknowledging their loyalty to a new fatherland, sooner or later most of them become part of our national life, giving it their service and devotion in return for the larger opportunity it offers them.

One cannot think of San Francisco without recalling the pretty story of the Phœnix, that has come down to us from the Orient. According to the legend this fabled bird, the only one of its kind in the world, lived in the Arabian wilderness for many hundred years; then, hoary with age, it built for itself a funeral pyre, fanned it into flame with its great wings, and sank into the burning pile. But the fire proved a source of life rather than death, for from the dying embers there arose a beautiful young Phœnix, which flew joyfully away to repeat the mysterious life of its ancestor.

This bird arising from the dead ashes of its old self was chosen, in 1854, as the seal of San Francisco, for even at that early date in its history the town had suffered from many disastrous fires, and

like the Phœnix was continually springing up better and fairer than before. Six times between 1849 and 1851 large portions of the town were burned, yet after each disaster those who had suffered most went resolutely to work to clear away the ruins in order to begin again. In 1906, however, occurred the greatest disaster in its history. Early on the morning of April 18, the city was visited by a severe earthquake which wrecked many buildings and damaged more. Fires broke out immediately. The water mains had been broken by the shock, so there were no effectual means of fighting the flames that raged for three days and left a large portion of the city in ruins. We may well ask why in the face of such repeated calamities the people should persist in rebuilding the city on its old foundations. Our answer to-day must be the same as that written in the old City Annals of 1854 in reply to a similar question, — "The Bay is there, the people are there, the gold mines are not yet exhausted, and the valley is as fertile as ever."

THE SEAL OF THE CITY OF SAN FRANCISCO

You may now see how largely the geographical location of San Francisco has influenced its development as an ocean port. Every port must be a gateway from ocean highways to inland routes of communication. The people who live in the

productive hinterland find a market for their products through the ocean port, and they in their turn become a market for the goods imported from other productive regions. How vividly the routes of commerce in and out of San Francisco show this development! Along the California Valley, hemmed in by mountains on north, south, east, and west, run the rivers and railroad lines, both turning a sharp angle to the west at the Carquinez Strait which opens to San Francisco Bay, the only natural outlet the valley has. At the Golden Gate the ocean highways radiate, like the spokes of a fan, to South America, New York, and Hamburg; to Panama, San Diego, and San Pedro; to Sydney, Manila, Honolulu, Hong Kong, and Yokohama; and to Nome, Puget Sound, and Vancouver. Small wonder is it that the poets of this

AN APARTMENT HOUSE IN SAN FRANCISCO

Note the heavy grade of the hillside on which this building stands. Compare the architecture with that of the New York apartment houses on page 189.

THE GOLDEN GATE *Photo. by G. Moulin.*

Western Gateway are prophets, and that its people are inspired with unbounded faith in the future of their city and with unparalleled energy to overcome all obstacles.

QUESTIONS FOR STUDY

1. What is a hinterland? Find on your maps the hinterland of Chicago, of New York, of Buenos Ayres, of Shanghai. Tell in each case how the city is connected with its hinterland. Which city is the largest?
2. What ancient city in Africa is still an important port in spite of a desert hinterland? How do you account for this?
3. Draw a plan of the location of San Francisco and the other Bay cities. Write the names of the chief bodies of water and locate the Bay cities. Write the latitude and longitude in the margin of your plan. What two cities of China are situated one a little north, the other a little south of San Francisco? Put these facts on your plan. Make your drawing as neat and attractive as you can.

4. What is the average January temperature of San Francisco? July temperature? How does this compare with the winter and summer temperatures in your city? In which season does most rain fall in California? In your city? Would you rather live in a place where the rainfall was evenly distributed through the year, or where it falls in one season? Why? See Appendix, p. 203.
5. What two historical events, one on the Atlantic coast, the other on the Pacific coast, happened in 1776?
6. Learn the location of every place mentioned in this chapter.
7. On a map of North America trace the route of the steel rails from Pennsylvania to San Francisco. Name bodies of water and countries crossed.
8. Describe the route you would like to take from your home to San Francisco. Draw this route on an outline map of the United States, marking the chief cities on the route and the mountains and the rivers crossed.
9. Tell which of the products of the California Valley are raised about your home.
10. From what mountains do the streams come that are used for irrigating the California Valley? What relation does their height have to the never-failing supply of water in these streams?
11. Imagine yourself standing on Nob Hill from which the pictures on pages 8 and 9 were taken. Tell what you would see as you looked out over the bay and the opposite shores.
12. What is the chief characteristic of the Chinese bazaars as shown in the picture? What would you be likely to find in those shops?
13. Make a list of the Spanish names you find on the map of California or on the map of San Francisco Bay. Account for their presence there.
14. Write a short composition about San Francisco describing the things that interest you most. Add to this, if you can, some knowledge of your own about the city.

15. Tell the story of the Phœnix. Why was it chosen for the seal of the city? Has your city or town a seal? If so, write a description of it and tell what it is used for. Arrange this in three paragraphs for your English composition of the week.

*16. Learn the stanza at the beginning of this chapter. Be sure you first understand what it means.

EXERCISES FOR WORLD REVIEW

1. From the list of "Twenty-five Largest Cities of the World" (Appendix, page 205) select those that are on bays or near the mouths of navigable rivers. Learn their location.
2. Compare the location of San Francisco with that of Shanghai. Make your comparison either by drawing or in writing.
3. Consult the *Chronicle's* shipping list (page 6) and tell how many vessels arrived in San Francisco the week of October 14. Write in a column the port from which each ship sailed and opposite this the cargo you think it brought. Use a geography textbook to help your memory with regard to the products of these countries.
4. Name the countries that border on the Pacific Ocean and tell the chief seaport of each.
5. On an outline map of the World show by a heavy line the former route between Hamburg, San Francisco, and Seattle; show by a dotted line the route ships take now the Panama Canal is opened.

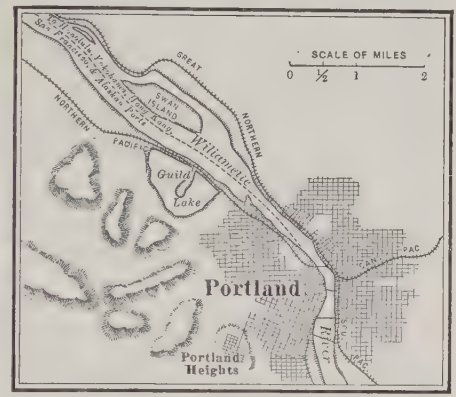
PORTLAND, THE ROSE CITY

EVERYBODY loves a river,—the poet, the artist, the fisherman, the miller, the manufacturer, and you and I. A river is always moving, and we love to watch the life that moves with it. Boats come and go, the road follows its bank, bridges cross it, logs float down the stream, mills and factories loom along its side. For these reasons and others, a river town has always something interesting about it. In all times men have gathered in groups on the banks of rivers, and many of these settlements are today important cities. Not all of them; some were started so recently they have not yet had a chance; others that once were full of life are now stagnant or dead. Vienna is over two thousand years old, but because of its commanding position we cannot think it will ever cease to be. Portland, Oregon,

THE WILLAMETTE FALLS

This view includes also a part of the manufacturing district. The people in the boats are fishing for salmon.

has had barely seventy birthdays, but already over 200,000 people call the "Rose City" their home. There are many reasons why towns should grow up on the banks of rivers; you can probably think of several. Perhaps you already know one reason why the old Gate City of Vienna should have persisted all these years in spite of wars and destructions. Let us look at the situation of Portland and prophesy as to her continuance and growth.



PORTLAND AND VICINITY

There can hardly be a greater contrast than that between the eastern and the western coasts of the United States. On the eastern coast many rivers flow down gentle slopes through fertile valleys to the sea and, at their mouths, bays and sheltered harbors have invited explorers and settlers to their shores. Along the Pacific Coast runs a mountain range, low, indeed, but hugging the shore, and sending out rocky spurs and headlands into the ocean. Parallel with this Coast Range are the snow-capped Sierras in California and the Cascade Range in Oregon and

Washington, crowned with high volcanic peaks that rise into the region of perpetual snow. Between these two mountain walls lies a series of valleys running north and south all the way from southern California to the forty-ninth parallel. You can trace this "inside route" on the map, — the San Joaquin and Sacramento Valleys in California, the Rogue and the Willamette in Oregon, the Cowlitz and Puget Sound in Washington. This line of valleys does not really stop with the Sound, but continues north along the Alaskan coast behind the protecting islands for a thousand miles, forming the famous "inside passage" that offers the most wonderful scenery in the world in quiet waters. In all this stretch of two thousand miles from southern Alaska to southern California, there is only one opening east and west across the mountain walls, — the valley of the Columbia River; and at the crossroads of these north-south and east-west valleys, on the Willamette River, twelve miles from its junction with the Columbia, lies Portland.

A general would call this location *strategic*, meaning that an army placed at such a crossroads would hold the key to the situation; but we may use the word in speaking of the commerce and development of the city. The early pioneers who hewed the tall firs for their cabins at this point on the Willamette River noted with satisfaction the deep water just where the river

Copyright, 1912, Weister Co., Portland.

THE CITY OF PORTLAND
Mt. Hood is shown in the distance.

takes a bend to the northwest. There being then no railroads and few wagon roads, it was necessary that the sailing vessels, which brought goods to be distributed to the scattered settlers and took away cargoes of wheat and flour, should get as far inland as possible to save the cost of conveyance. At the point where they could go no farther, Portland was founded, the only city of the Northwest at the head of deep-sea navigation and on the line of a water route into the interior. We shall see how important this water route is.

East of the Cascade Mountains lies a vast inland basin comprising parts of Oregon, Washington,

Idaho, and British Columbia, a region once considered a desert, but now supporting herds of cattle and sheep, and raising, in a single year, fifty million bushels of wheat. This "Inland Empire," as it is called, is thinly peopled, like all extensive wheat and grazing areas, so we know that the vast quantity of food products it raises must find a market elsewhere. The wheat is cut, threshed, and sacked on the ranches, and sent out by three routes, one leading to Spokane, one to the Puget Sound cities, and the third through the Columbia Valley to Portland. The route to Portland has one advantage, it is down grade all the way to the ocean, whereas trains to Puget Sound must climb the steep mountain grades.

It is not to be wondered at, therefore, that Portland, at the meeting-place of sea and inland communication, is a great exporter of wheat to foreign countries. Ships come from China and Japan, from Liverpool, from South America, and from the coast cities of the United States, to be loaded with wheat and flour. Lumber is also an article of export. Some of the most beautiful forests in the world are in Oregon, but the sawmills on the Willamette and on other rivers are making the timber into boards and other products as fast as they can, and a time will surely come when these magnificent forests will be a thing of the past. Fortunately the United States Government has set aside certain tracts, known as "Forest

Reserves" or "National Parks," which are to be kept free from the ruthless cutting of the lumberman and to serve as playgrounds for the people.

Portland is still a commercial city. Although it has developed manufacturing to a certain extent, it is to-day chiefly a market-place where the products of the country — wheat, lumber, fruit, and hops —

ONE OF THE GREAT LUMBER MANUFACTURING PLANTS

are exchanged for furniture, carpets, hardware, machinery, and all kinds of manufactured goods from the eastern part of the United States, and for silk, tea, spices, burlap, etc., from the Orient. The following cuttings from a Portland daily paper will give you a vivid picture of the destination of some of the products of Oregon.

OREGON APPLES BRING TOP PRICES IN GERMANY

Writing to the Portland Commercial Club, under date of April 20, a fruit-dealing firm of Hamburg, Germany, advises that on that date two cars of fancy Newton Pippins from Hood River were sold for from 18 to 20½ marks[1] per box. These are top prices, such as have not formerly been seen in the Hamburg market for American apples. The Hamburg dealer writes that this sale is more interesting on account of the fact that these two cars came in competition with the first Australian apples of the new crop, but the latter could not equal in quality the Oregon product and accordingly brought much lower prices.

LINERS WILL LEAVE ABOUT SAME TIME

Three Oriental Liners will be leaving Portland fairly close together this month, laden with Oregon products which will be valued at more than $600,000. The trio is composed of the Norwegian steamships Henrik Ibsen and Hercules and the British steamship Orteric. The Henrik Ibsen will sail for Hong Kong and way ports Thursday, and she will have aboard a full cargo of flour and wheat.

The Orteric is a 12,000 ton carrier. After taking on about 7,000 tons of flour, wheat, and lumber here (Portland) she will go to Puget Sound to finish loading.

The steamer Yosemite is discharging 12,000 sacks of cement from California; she will load with lumber for San Francisco. The Nippon Maru will leave for the Orient to-morrow at one o'clock. The cargo is a heavy one and in it is a large consignment of cotton for the Japanese factories.

[1] One mark equals twenty-five cents (nearly).

It must be plain to you that there are striking geographical reasons influencing the location and growth of Portland, and that the Columbia River is playing an important part in this development. Though the tourist who sails up the stream is absorbed mainly in its magnificent scenery, the wooded mountain-slopes and leaping waterfalls, the curiously worn rocks and the novel fish-wheels, yet he would be dull, indeed, did he not become aware that it is already a busy commercial highway. Long trains carry freight and passengers between the Inland Empire and the coast, and locks and canals when completed will

THE LOWER HARBOR
Showing a large fleet of wheat vessels.

enable river steamers to go several hundred miles inland. The Columbia is developing a hinterland for Portland as the Hudson-Mohawk Valley and the Great Lakes have done for New York, yet the most hopeful Oregonian would hardly dare prophesy that the Inland Empire will ever support

so dense a population as the prairies of the Middle West. Can you tell why?

The beginnings of Portland were simple. A clearing was made among the tall firs and cedars, and a log cabin built by pioneers from New England in 1844. Before long some one built a store for the sale of the incoming cargoes, roads were made into the interior, other houses and stores sprang up, more ships came, and before long there was a little village rising on the gentle slopes of the west bank of the Willamette. The story goes that the builders of the first cabin had a friendly dispute over the name of the town that was to be. The man from Massachusetts wanted a Boston on the Pacific Coast, the native of Maine wished to call the town Portland. They decided the question by tossing a copper cent, — head, Portland; tail, Boston. "Head" came up twice, hence Portland was adopted as the name of the city. It has a lovely site on wooded slopes which rise gradually to the foot of the Heights, a line of bluffs running parallel to the river and rising six hundred feet above it. From these wooded headlands which jut into the valley, one gets a glorious view of the Cascade Mountains with the white cones of Mount Hood and Mount St. Helens, Mount Adams, and Mount Jefferson, rising far above the general level of the range. Below is the Rose City, lying on both sides of the river embowered in trees and gardens. To the north and east shine the tangled waterways

of the Columbia, while on the south the Willamette issues from its gardens and orchards. The poet Wordsworth once exclaimed of London as he viewed it from the Thames in the early morning, "Earth hath not anything to show more fair," and the people of Portland surely may echo this as the glory of valley and mountain stand revealed to them from these heights. The city looks its prettiest in June, when the roses are in bloom. Then occurs the Rose Festival, processions and floral displays, land and water sports, giving the city a gala week. During these carnival days citizens and visitors forget that Portland is a big commercial port, that steamers come to it from every part of the world, that the steam sawmills are cutting its trees into timber, and that the falls of the Willamette are grinding spruce logs into pulp and paper and weaving wool into cloth.

AT THE ROSE CARNIVAL

Automobiles and carriages gorgeously decked with roses take part in the parades at this annual event.

Strangers who come to Portland during the winter and spring rainy season are apt to think that it is the rainiest place in the world, and they

are not a little astonished to find that its yearly rainfall is really only about as much as that of New York City. It is true that Portland, as well as all the Pacific Coast of the Northwest, does not enjoy so many clear days as cities in other parts of the United States, for the rain falls gently a little at a time. Often it is a "dry rain," meaning a fine mist that seems not to bother anyone; children play in it, babies do not mind it, and the cool dampness brings to the cheeks roses that many a dweller in sunnier climes might envy. There is no climate that is perfect, and the people of Portland think that the absence of severe cold, strong winds and blizzards, and the bracing coolness of the summer, make up for lack of sunshine. Experience alone will determine whether or not you agree with them.

The great outdoors is spread invitingly before the inhabitants of the Rose City. For long holidays, there are the mountains with their forests and glaciers and their steep ascents to climb. The river entices young and old; along its banks are anchored house-boats of every size and description, and through its shaded windings the boy and girl, tired of school, the father and mother, ready for a vacation, can find joy and refreshment. One of the poets of Oregon has expressed the affection of the people generally for their river in the following stanza: —

From the Cascade's frozen gorges,
Leaping like a child at play,
Winding, widening, through the valley,
Bright Willamette glides away.
Onward ever lovely river,
Softly calling to the sea,
Time that scars us, maims, and mars us,
Leaves no track or trench on thee.

S. L. Simpson.

QUESTIONS FOR STUDY

1. From the list of "Twenty-five Largest Cities of the United States" (Appendix, page 204) select those which are on rivers. Which are at or near the junction of two rivers?
2. Give as many reasons as you can why cities are located on the banks of rivers.
3. Draw a plan showing the location of Portland at the crossroads of commerce. Make this as complete as possible with names of rivers, mountains, and land and water routes of travel. Write the latitude of Portland in margin of map. What city of France is at a crossroads of travel and in about the same latitude? Write the name of this city in the margin of your plan.
4. Locate the city for which Portland was named. Find out all you can about the location, climate, population, and commerce of each. What things are alike about these cities? Write this in the form of a composition or arrange it in chart form in outline.
5. On an outline map of the United States or the Western States color in red the "Inland Empire." Write or print carefully the names of the states composing it and the rivers flowing through it. What is the rainfall of this region? (Consult rainfall map of the United States in your geography textbook.)

6. What cities in the United States besides Portland export wheat and flour? (Consult question 8, page 101, for your answer.)
7. Study the location of the following cities, and explain why each may be said to be at a crossroads of commerce: St. Louis, Omaha, Honolulu, St. Paul, Kansas City, Chicago.
8. Make up five good questions about the cities referred to in Exercise 4, to test the knowledge of your classmates.
9. Imagine yourself standing on the heights above Portland on a clear day. Describe your view of the city, the river, and Mt. Hood.
10. Write a composition suggested by this study of Portland. Call it "A River Town," or choose a title of your own. Write about any river town you like.

EXERCISES FOR WORLD REVIEW

1. Locate the six leading wheat-producing countries given in the chart below. Consult the "Wheat Harvest Calendar" on page 101 for month of harvest of each. Find out if rainfall is light, moderate, or heavy, and if these areas are thinly or thickly peopled. Give export town of each area. Arrange these facts in a chart as shown below. (Consult rainfall and population maps in your geography textbook.)

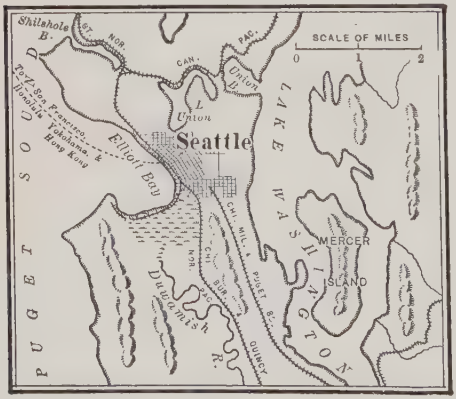
Six Leading Wheat Countries of World

Countries	Months of Harvest	Rainfall	Population	Port
United States				
Russia				
France				
India				
Austria-Hungary . . .				
Italy				

2. What is the length of the Columbia River? Name a river in each continent about as long.
3. In what month do Oregon apples ripen? Australian apples? Which is farther from the equator, Portland or Melbourne?

SEATTLE

THIS bustling, wide-awake city on Puget Sound has already begun to call herself the "Queen City of the Northwest." Perhaps the title seems a bit ambitious for so youthful a town, but her situation and resources are so magnificent that they cannot but rouse ambition. You must think of Puget Sound as a great Mediterranean Sea extending southward into the heart of Washington. From the main body of water countless arms, deep enough to float sea-going ships, reach far into the land, making safe harbors free from ice all the year. This splendid body of water is the front door of Seattle, and it opens wide through the Fuca Strait to the commerce of the Pacific. Northward through the



SEATTLE AND VICINITY

The principal railroads entering Seattle are: the Northern Pacific; the Canadian Pacific; the Great Northern; the Chicago, Milwaukee, and Puget Sound; the Chicago, Burlington, and Quincy.

Georgian Strait an "inside passage," where ocean storms are unknown, leads to the ports of southeastern Alaska and out beyond to Valdez. Four transcontinental railroads enter the back door of the city bringing the products of the South, East, and Middle West, to the front door where they are exchanged for goods from over the seas. Wheat and flour from the "Inland Empire"[1] and the Middle West, cotton from the South, farming implements from Illinois, lumber from the Cascade Mountains, steel beams and girders from Pittsburgh, and furniture, clothing, and a host of manufactured goods come to Seattle for distribution along the coast, and for shipment to Australia, Alaska, and the Orient. Into her open door come coffee, tea, sugar, silk, mattings, spices, hides, hemp, jute, and other products to be distributed among the people of the United States. Seattle, therefore, is a pivot of transportation; her doors swing outward to send American products

THE MINNESOTA

One of the largest freight and passenger steamers sailing from any Pacific port. She is engaged in commerce between Seattle and the Orient.

[1] See the chapter on Portland.

all over the world and inward to receive products from the other side of the globe. It is this passing and repassing, loading and unloading, that has built up the city.

Had the Goddess of Liberty, twenty or thirty years ago, cast her eye over the cities which brood under her protecting arm, she might without dispute have called Seattle her ugly duckling. In appearance this young city was awkward and ungainly, for the pioneers of the early days had no time to think of a City Beautiful. They had work enough to keep the sawmills buzzing and to provide shelter for themselves and their families. What did it matter to them that there was hardly a level road in the town, or that their ugly frame houses perched at all sorts of angles on the hills that sloped abruptly to the sea? They served for protection from storm, and as for the long, hard climb, there was time to take it leisurely, and muscles were strong in those days. Now times have changed. The old fairy story has repeated itself in history and the ugly duckling is turning into a beautiful swan. The city seems to float like this graceful bird on the bosom of the waters. Its western shore is lapped by Puget Sound; on the east parallel with the Sound, a lovely fresh-water lake stretches for twenty miles; and on the narrow neck of land between the two lies Seattle, already pushing beyond the peninsula to the northward, where there is room enough for the million or more

people who may one day make their home in the Queen City. But in 1852, when Yesler, a sturdy pioneer, put up his steam sawmill on what is now Pioneer Square, in the heart of the city, there was little in the immediate surroundings to encourage him to dream dreams of a future metropolis. Yet even the Indians had seized upon its advantages of location, for long before the foot of the white man had broken the stillness of the forest aisles thousands of Indians used to assemble here occasionally for a great council. It was easy for them to come by forest trail and canoe to this central meeting-place. They must, however, have experienced difficulties in passing the peace-pipe, for Seattle is built upon twice seven hills, hills that might almost have daunted the old Romans. But the energetic people of the Northwest never hesitated. They cut down the trees, built houses, schools, churches, stores, and libraries; then suddenly becoming conscious that their city of to-day was but a beginning of that of the future, they went to work to make it over, carrying away the hills, at least in the business section, to make fairly level grades for car lines and heavy teaming.

THE TOTEM POLE IN PIONEER SQUARE[1]

1 This Totem Pole was brought from Alaska and is a memorial of a race rapidly dying out.

Since we began to dig the Panama Canal there has been a good deal said about "making the dirt fly." In Seattle it has been flying at a prodigious rate, but without much noise. The process has been simple; streams of water through a giant nozzle were directed against the hills, the clay and gravel melted like snow in a January thaw, and were led through pipes to the mud flats south of the city, where new streets for warehouses, railroad shops, foundries, and factories will be built. The really difficult part of the undertaking was to pay for the work and to preserve the beauty of the fine buildings whose location was altered because of the lowering of the streets. Houses had to be propped up on stilts, and for the time being the residents climbed up and down by ladders. In some places buildings were moved away or torn down altogether. In 1906, there stood on a hill overlooking the Sound one of the best hotels in the city. It was taken down, the hill washed away, and two years later a massive fourteen-story hotel had taken its place, on a broad level street, now one of the finest quarters in the downtown section. Such rapid changes have a suspicion of witchcraft about them, even to those who watch the process, but the only magic used has been the determined spirit of the citizens and the skill of the engineers employed. It was the same combination that rebuilt Galveston after its destruction by flood, when the Texas city had to be raised out of reach of the

THE BUSINESS PORTION OF SEATTLE
The Olympic Mountains are shown in the distance.

angry waters that now and then sweep over the low shores of the Gulf of Mexico. In Galveston the houses were lifted up on stilts, and the level of the city raised to meet them; in Seattle, the streets were taken away from the houses, and foundations had to be pieced on to fill the yawning gap. By the time the re-grading of the city is finished nearly 34,000,000 cubic yards of earth will have been removed, and sixty miles of narrow, hilly streets will have been changed into sixty miles of broad, level thoroughfares, an accomplishment of which any city might be proud.

Away from the business center the hills fur-

nish ideal sites for homes and schools. Whichever way one turns there is a noble prospect. Below are the three lovely lakes — Washington, Union, and Green — with their irregular wooded outline and encircling boulevards, and beyond the city's limits stand the somber forests which give to the Evergreen State its pretty name. On the western shore of the Sound, lively with sea-going craft of all kinds, the Olympic Mountains,

SEATTLE FROM LAKE WASHINGTON
This indicates the hilly character of the country

a line of jagged, snowy ramparts, emerge ghost-like from a low-lying band of mist, and woo the hardy climber to try their unexplored heights. Around to the east is Mount Baker, the last sentinel of the Cascade Mountains, and south looms the peak about which no one can speak except in extravagant language. Mount Rainier, its silver

cone furrowed by glaciers, rises almost from sea-level to a height of 14,526 feet, a majestic peak, now catching the radiance of the sunset glow, now

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MT. RAINIER FROM LAKE WASHINGTON

disappearing behind clouds of mist and smoke that too often dim its lovely outline.

To see the city at its fairest, one must approach it by night from the Sound. Endless rows of lights climb the hills, outline the lakes, and reflect their radiance in the placid waters, till the spangled city seems like a bit of the starry heavens let down to earth. Few cities are more brilliantly lighted, for few have such unlimited advantages for water power. The streams that rush from their mountain sources leap in falls and rapids, carrying with them great possibilities for generating electricity and for turning mill wheels. Some day they will all be harnessed for the use of man; as yet, this corner of our country has scarcely been touched

in the development of its industries. In the rocks lie stores of coal, iron, and copper, the inexhaustible Alaska coal fields will soon be opened, and when the forests shall be no more, the state will still be "evergreen" because the fertile soil responds so quickly to the toil and care of the farmer.

Just now the commerce of the city is increasing by leaps and bounds. In 1896 the first regular line of steamships ran between Seattle and Japan; now there are five different companies whose steamers ply between these ports and others in the Pacific, carrying cotton, lumber, and flour. Since gold was discovered in Alaska in 1897, the United States Assay Office in Seattle has paid $199,094,871.05 for gold dust; in the mean time the people who flocked to the north have received most of the necessaries of life through Seattle. Upwards of ten vessels a week leave for Alaska during the summer months, and the departure of the first ship for Nome in the spring is such an event that a large crowd always gathers on the dock to speed it on its way. Beside these lines of trade there are regular sailings from Seattle to Hamburg *via* South America, as well as steamers going to Hawaii, to Mexico, and to towns on the Pacific Coast of the United States and of British Columbia.

Probably by this time you think Seattle spells Opportunity as well as Pleasure for its citizens and for those who seek a new country under the

old flag. Few who come are disappointed. After they grow accustomed to the gray days and rains of winter, they cease to envy their brothers in the East who are wading through the snow and slush of city streets and country roads. It might better be said there is no winter or summer as most of us know these seasons; no day in July and August

THE GREAT NORTHERN DOCKS

At these docks the "Minnesota" and other great steamships load and unload their immense cargoes.

is too warm, nor one in January and February too cold. Boys and girls can never coast down the long hills, but they can enjoy outdoor sports nearly every day in the year, and for the long holidays there are the mountain playgrounds with their glaciers, waterfalls, and lovely meadows starred with flowers. If you have never been to Seattle, do not forget to go. If you stay long

enough, you will be certain to catch her spirit of ambition, and will be willing to call her by the name she aspires to fulfill — the Queen City of the Northwest.

QUESTIONS FOR STUDY

1. Learn the location of each place mentioned in this chapter.
2. On an outline map of the United States locate Seattle. Trace the railroad route from your home to Seattle. Use a colored pencil to draw this route and try to make the map attractive with neat printing or writing. Print names of States crossed.
3. Compare the winter and the summer temperatures and rainfall of Seattle and your town. What differences can you think of between your winter life and that of boys and girls in Seattle?
4. What kinds of trees grow on the Cascade Mountains? How do they compare in kind and size with those around your home?
5. Tell about the surroundings of your home. Are they hilly or level? If you have not a mountain like Mount Rainier, perhaps you have a river, lake, or bay. Tell about it.
6. How high is Mount Rainier? Have you seen a mountain as high? Where?
7. From the list of famous mountain peaks in the Appendix select those which you have heard of. Which are higher than Mount Rainier? which are lower? Which are frequently climbed?
8. In what direction from Seattle are the Olympic Mountains? the Cascades? What similarity do you find between Mount Hood and Mount Rainier?
9. Examine the pictures in this chapter and tell about the beautiful surroundings of the city.

10. What necessaries of life do the people of Alaska order through Seattle?
11. How long would it take to go from Chicago to Seattle, traveling forty-five miles an hour? From Seattle to San Francisco?

EXERCISES FOR WORLD REVIEW

1. Compare Puget Sound and the Mediterranean Sea as to —
   (a) location;
   (b) countries bordering;
   (c) straits leading to;
   (d) rivers emptying into;
   (e) cities.
2. After studying this, answer the following questions:
   1. Which of the two bodies of water has more countries touching it?
   2. Which is farther north?
   3. Which has more rivers emptying into it?
   4. Which has more cities located on it?
   5. What languages does one hear spoken around each?
3. Try to find out what early explorers visited Puget Sound, and when.
4. Compare Seattle and Genoa as to —
   (a) location;
   (b) population — nationality, size;
   (c) rainfall — in which season has each its rainfall?
   (d) exports.

   Write this in four paragraphs.

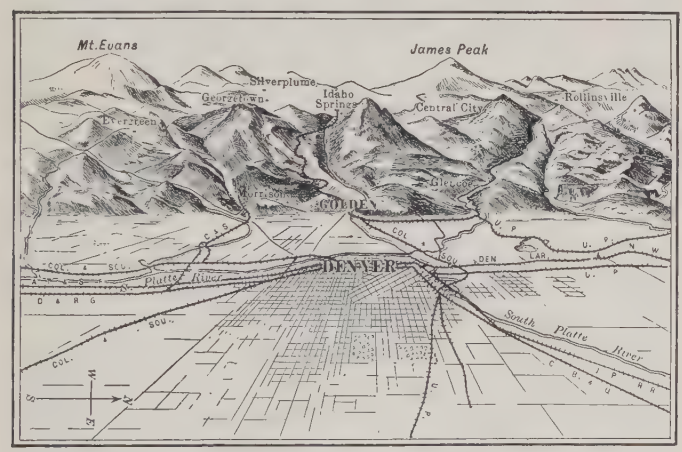
DENVER, THE CITY IN THE WILDERNESS

IN every one of the cities you have thus far studied, you have found some particular features of location or surroundings that have made that city different from all the others. This is true of Denver in a remarkable degree. Let us see what some of these characteristics are that entitle Denver, the "City in the Wilderness," to bear the proud title of "Queen City of the Plains."

If you will turn over the pages of this book and glance at the maps showing the location of the different cities, you will find that Denver is the only one that is not situated on a large body of water. Indeed, if it were not for Denver, you might be inclined to suppose that in order to rise to importance, a city must be on some large bay or lake or river. But here is Denver, in the heart of a vast continent, a thousand miles from any ocean, with only the small stream of the South Platte, flat and shallow as its name suggests, touching its outskirts. No bold explorer ever sailed up the stream to found a colony on its sandy margin. No rich cargo ever floated through its tangled channels across the desert waste to the Mississippi River. Still, though this river is insignificant in commerce, and not to be named with the Hudson, the

Ohio, or the Savannah, it had an influence, as you will see, in determining the location of the city, and from it comes part of the city's water supply; so that Denver is a river town, though in a different class from New York or Pittsburgh or Savannah.

In the second place, you must think of Denver as having been created by man out of a wilderness, not by the wave of a magic wand like Gary, but by patient, unremitting toil during the last half-century. In the mad hunt for gold, when



DENVER AND ITS SURROUNDINGS

The principal railroads entering Denver are: the Atchison, Topeka, and Santa Fé; the Chicago, Burlington, and Quincy; the Denver and Rio Grande; the Union Pacific; and the Denver and Northwestern Pacific.

miners and adventurers were busy washing the gravels of the mountain streams as they began their slow journey across the Plains, no large quantities of the precious metal were found in the

sands of the South Platte and its tributaries; but where the little Cherry Creek joins the river, a group of cottonwood trees offered a bit of firewood and grateful shade from the desert glare, and here in 1858 were built some miners' cabins which afterward became the nucleus of Denver. How unlikely did it seem in those days that a great metropolis would ever replace those rough cabins! Except for the narrow fringe along the river, all around was desert. The cactus flourished in the sand and herds of buffalo passed by in search of food and water. There seemed nothing to attract one to make a home in this wilderness. In 1820, Major Long had crossed the spot where Denver now stands and had reported to the Government at Washington that this part of the Louisiana Purchase would be valuable to the United States chiefly as a barrier to prevent population from spreading too far west; and in 1838, Daniel Webster opposed establishing a post route across these plains, saying, "To what use could we ever hope to put these deserts, or these endless mountain ranges covered with perpetual snow? What use have we for such a country! Mr. President, I will never vote one cent from the Public Treasury for such a purpose." So for many years the Great American Desert, as it was called, lay untouched; but the soil was not dead, only sleeping, waiting, like the little maid in the fairy tale, for the touch which should waken it into life. This came with

A VIEW FROM THE DOME OF THE CAPITOL

the gold-diggers. Along with them came the man who loved the soil. His results, when he poured the cooling waters from the snow-clad mountains on his barren acres, were startling, there was so much energy in this new soil. When he succeeded, others followed. The Government helped; reservoirs and dams were built in the mountains, and aqueducts and canals now lead water across gulches and ravines to the thirsty soil of the Plains. To-day, the fertile valley of the South Platte has become a garden, and to the south of Denver are acres of blossoming orchards, melon patches, and celery trenches, bearing in such abundance that their harvests are sent far beyond the confines of the State of Colorado.

Besides its desert surroundings, there were other drawbacks to the steady growth of Denver into the Queen City. In the years following the discovery

of gold in the Rocky Mountains, many rival towns sprang up in the vicinity of Denver and seriously threatened its existence. There was Golden, fifteen miles to the west, nearer to the mountain towns of Georgetown and Central City, with a promising and beautiful location at the mountain gateway leading to the mining camps. For five years it was the capital of the Colorado Territory, and when the railroads were planned across Colorado, it seemed at one time as though Denver were to be sidetracked in favor of this ambitious little rival. These were dark days for Denver. Many people became so disheartened because of its poor prospects that they left the city and took their business elsewhere. Fortunately there were plucky and intelligent citizens who felt sure the town was rightly located. Far enough from the mountains not to be hampered in its growth, it was yet near enough the mountain passes and opening valleys to serve as a base of supplies for the mining camps and as a distributing center for their products. By sheer force of determination, these men made it possible for the railroads to come to Denver, so that from the year 1870 to the present there has been no halt in its progress.

But Denver has a third distinction, and this one sets it far above all rivals. Perched far above the low plains and valleys where most of us live, it has the highest elevation of any town of its size and importance in the world. How proud the city

is of its lofty perch! On one of the steps of the entrance to the Capitol is a bronze plate, "One mile above sea-level," and in bold type the leading newspaper announces that their building is "Just one mile above sea-level." What clear pure air must fill the lungs of the Denver boys and girls! Do you not envy them their walk to school every morning, with the blue Colorado sky above them and the fresh breeze from the snowy mountains fanning their cheeks? If pure air and plenty of it were all that is needed to warrant a long life, we might expect these boys and girls to live to be as old as did Methuselah.

THE COLORADO STATE CAPITOL AT DENVER

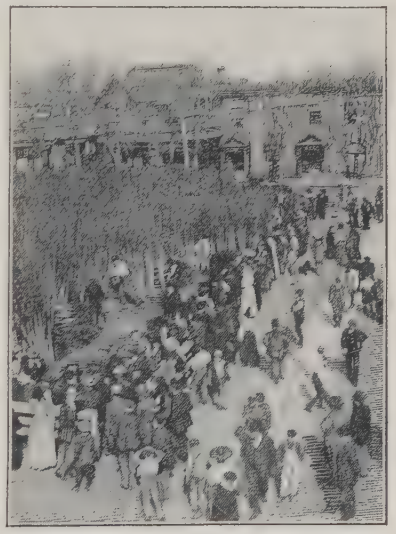
Because of its location so high in the air, Denver has another distinction, — that of getting along with less rainfall than the majority of cities of the United States; but it does so well with fifteen inches a year that its lawns are as smooth and green as those in rainier sections, and its trees and shrubbery do not fall far behind those of the beautiful New England towns from which so many Denver people come. There are some bless-

ings in a land of little rain. It must be delightful not to have gray skies interfere with a picnic or a tramp among the mountains. What a sharp contrast there must be between the rainy winters of the Northwest and the cloudless days of December and January in Colorado! This dry air has an invigorating quality about it that acts like a tonic. People are strong and energetic and, as you have seen, they are not afraid to face difficulties. Being so far from any ocean, the air is free from fog. Often it is so clear that the mountains many miles away, tempt the stranger like an easy walk. Then, too, though summer days are often warm, summer nights are cool enough to make a blanket acceptable.

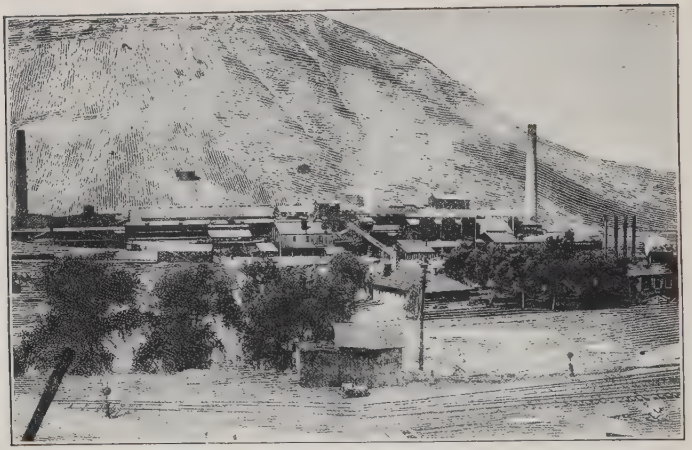
Perhaps you are wondering how it is possible to have lawns and beautiful trees and vines in a city where for weeks and months at a time little rain falls. It is no easy matter. To keep the grass green and the garden flourishing requires the combined efforts of all the family. No one grumbles over this work, however, for everybody in Denver takes a great interest in making the city attractive and pleasant to live in. This is evident from the fact that for several years, on Arbor Day, the city gave trees to all who cared enough to come and get them. As many as sixteen thousand trees were distributed one year. What a pretty procession that must have been — men and women, boys and girls, each bearing a tree with which to make

his home attractive! This enthusiasm for beautifying the city is felt throughout Colorado; the whole State takes pride in its capital city. Its streets are clean and spacious and beautifully lighted, and on Capitol Hill the State has placed a superb building where its laws are made and administered and its affairs regulated.

But it is not only because it is the capital city that the people of Colorado look to Denver. It is the chief commercial city of the State, and is rapidly growing into a busy manufacturing center. Because of its central position, Denver did a large business in the early days in carrying supplies to the mining camps. When the wagons that carried in food, machinery, and other necessaries returned, they came out laden with the precious ores,—gold, silver, and lead. With plenty of coal near at hand, what could be more natural than to smelt the lead and silver in this convenient distributing center. So smelting, in which the



DISTRIBUTION OF TREES ON ARBOR DAY

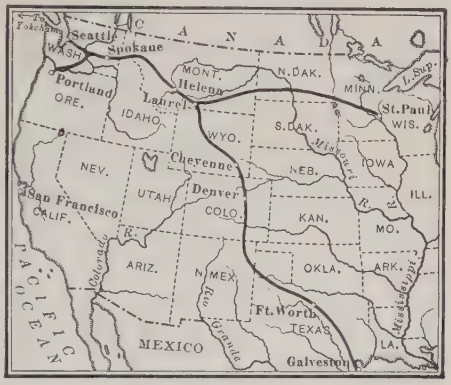


ONE OF THE GREAT SMELTERS

Where the ore, after mining, is separated from the rock, and freed from impurities.

worthless earth is separated from the ore, became one of the earliest industries of Denver. Then machine shops for the repairing and making of mining machinery were established, for Denver was far from Eastern cities and the transporting of heavy machinery was expensive; it would be cheaper to make it where there was a demand for it. A food supply was a necessity. Why, then, send cattle and sheep to Kansas City to be slaughtered? We are not surprised, therefore, to find that meat-packing is an industry of Denver, and that flour and grist mills and wheat elevators make the sky-line of the city irregular. As railroads multiplied and ease of transportation was secured, the people of the interior mountain towns, as well as

those scattered far and wide across the Plains, began to rely on Denver for all kinds of supplies. This dependence is rapidly growing. Coal is plentiful and easy to bring to the city, and in the streams that rush through narrow canyons and leap over rocky ledges in the foothills and mountains there is unlimited power for many kinds of manufacturing. Where transportation is easy, markets convenient, and raw material at hand, manufactures will flourish; and where living is as pleasant as in Denver, people who come will like to stay. Denver is one of the four great distributing points on a great east-west line across the United States — New York, Chicago, Denver, San Francisco. As you look on the map of the United States and note the position of these cities, you will be impressed with the importance of that of Denver — with one hand stretched out to the vast plains, she gathers, by means of the converging railroads, the wealth that man has wrested from the apparently barren



THE NEW "GULF-TO-SOUND ROUTE" OF THE SYSTEM OF RAILROADS IN THE NORTHWEST

soil; with the other hand she gathers the rich toll of the mountains, gold, silver, lead, coal; all these products are sent north, south, east, and west in exchange for luxuries and necessities from other centers. There are other avenues of trade also opening to Denver; it is about to become a great Halfway House on a route linking the Northwest with the Southeast. On the Gulf-to-Sound Railway from Galveston to Seattle, Denver will be a strategic point. By this route the cotton of the South will be sent to Seattle for shipment to Yokohama and Hong Kong, and grain from the Inland Empire will find new markets along the South and East. Who can foretell what her position on this new route will mean to Denver? It seems as if the city were the very creation of the railroads. How appropriate, therefore, is the greeting that the city gives to all those who enter her gates. As the newcomer passes at night out of the portals of the Union Station, he is astonished to see the greeting "Welcome" pricked out in dazzling lights above a beautiful bronze archway under which he must pass into the brilliantly lighted streets. When he leaves the "City in the Wilderness," he is even more astonished to see "Mizpah" on the other side of the Welcome Arch. This is the Denver spirit of hospitality, and the visitor is convinced that it adds another to the already great number of the city's attractions.

QUESTIONS FOR STUDY

1. Write in a column the names of all the Representative Cities and opposite each the body of water on which it is located, and the State it is in.
2. In the above exercise, mark with a star those cities which are capitals.
3. Examine the picture and tell in what ways the location of Golden is more beautiful than that of Denver. What advantages do you see in Denver's location?
4. On an outline map of the United States, locate the four great distributing points mentioned in the text. Underline each, and write the distances between them.
5. Consult the following "Table of Distances" and find how many miles it is from New York to San Francisco. How far must the Senator from Colorado travel to attend Congress at Washington? What is the distance from Seattle to Galveston *via* Denver on the Gulf-to-Sound Railway?

Distances from Denver by Shortest Route

New York,	1960 miles	St. Paul,	886 miles
Washington, D. C.,	1814 "	San Francisco,	1377 "
Chicago,	1047 "	Seattle,	1595 "
Galveston,	1133 "	Atlanta,	1538 "

6. How many feet is Denver above sea-level? How does this compare with the elevation of your home?
7. Do you celebrate Arbor Day where you live? How? Would it be a good plan for your home town to adopt the Denver idea for that day?
8. Give as many as possible of the distinct features of Denver.

EXERCISES FOR WORLD REVIEW

1. How many and which of the "Twenty-five Largest Cities of the World" are located at sea-level?

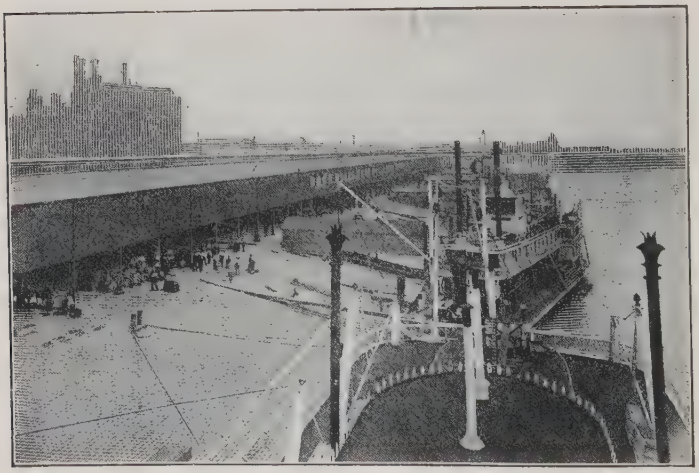
2. What reasons can you give for the fact that most of the great cities of the world are thus situated?
3. What two mining towns in South Africa are situated on a high plain? What similarity do you find between the rainfall of these towns and that of Denver? Which has more routes of travel converging on it?
4. State the chief facts of location of these three towns. Give reasons for the location of each.

NEW ORLEANS, THE CRESCENT CITY

THE boy or girl who visits New Orleans for the first time will probably spend many hours along the levees that skirt the curving river front. What delicious whiffs will come to him from the coarse brown bags of sugar and the barrels of molasses ranged in orderly rows on the levee! If he has a sweet tooth, let him search for a crack from which he can sample the syrup as it oozes from the barrel. Not so very long ago this was a favorite pastime of the black pickaninnies who loafed here in the hot afternoons, for in those days the cargoes lay exposed to sun and rain, only the perishable freight being covered with tarpaulins. Now there are over two miles of well-built steel sheds in which cargoes are housed while waiting to be shipped. These sheds are being rapidly extended, and with their advent has disappeared much of the lazy picturesque life that gave an added charm to the Crescent City. Life is still leisurely enough, however, that the visitor need not feel he is in the way as he strolls along.

The river is low in December, and as the ships are moored alongside instead of bow on, it is easy to get an intimate view of life on board an ocean

freighter in port. The officer who is on duty is glad to talk with anyone interested in his boat and cargo, and we are near enough for the conversation to be quite friendly. Here is an English boat from Liverpool manned by an odd-looking crew, men with brown skin, silky black hair, and features like our own. They wear gold rings in their



THE NEW ORLEANS WATER FRONT
Showing the new steel sheds, the levees, and the river boats.

ears and red caps, but they are short and slight and speak a language we do not understand. The mate tells us they are East Indians.

"Why does an English ship have an East Indian crew?" we ask.

"Because they are cheap," is his brief reply.

We find the ship brought many thousand pounds

of sacking from Calcutta. Manila hemp, the mate says, is made into fiber, woven into bags, and shipped to New Orleans.

"What need is there for so many bags, and why don't we make our own from Kentucky hemp?" we ask.

"I'll answer the last question first," the mate replied. "They can be made cheaper over there than in your country, where you pay your workingman good wages and do not let him work more than ten hours a day. As for the other question, — look around you. Those big bags are filled with rice, these with sugar; then there is the sacking for the cotton bales, and much of the coffee that comes to New Orleans is re-sacked for distribution. It is a big item of import, this hempen stuff; 75,000,000 pounds come every year to this port."

There is no need to ask what the mate's ship carries back to Liverpool, for, as we talk, we watch the cranes lower cotton bales into the hold. All the fall and winter and on into spring, the cotton stream passes down the Mississippi and across the Atlantic, one solid, steady flow until it reaches the English Channel, where it divides, radiating to Manchester, Havre, Antwerp, Hamburg, and St. Petersburg. That boat in mid-stream is a French freighter getting up steam to go down the river. It came over empty with water as ballast, but is taking back cotton for the spinning mills of Rouen.

Beyond are two ships from Glasgow that rouse

our interest to the pitch of excitement. Can we believe our eyes? In the high prows are carved figureheads, such as we have read about in story-books. Who is the kingly looking fellow wearing a gold crown and carrying in his hand a trident to show his power over the waves? Good old Neptune, you are far away from your home in Mediterranean waters, but apparently you are not at all concerned about it. The other figure is that of a rosy-cheeked, buxom lady leaning far out over the waves; evidently salt water baths agree with her. What a glorious life, to dip into the sea froth, and to arise with cheeks glowing from exercise! We linger long about these prows, for Romance has cast a spell over humdrum life and we are loath to break it.

Another day a boat from the Gold Coast of Africa ties up at the wharf. It has brought mahogany, and will return to Liverpool with cotton, and oak staves for barrels. The fragrant red lumber lies on the low land back of the protecting levee. By dint of many questions we learn that 10,000,000 feet of mahogany come to New Orleans every year, the greater part from across the Gulf,—from Mexico, Honduras, and Costa Rica. Some of it is made into "antique furniture" in New Orleans, but Grand Rapids, Chicago, New York, and San Francisco get many carloads, and many of the finest logs are re-shipped to Copenhagen, Stockholm, St. Petersburg, and Liverpool.

Under cover of one of the steel sheds is a banner cargo of coffee from Rio de Janeiro and Santos. One hundred and twenty thousand bags arrived one December morning, and it took nearly two

RIVER BOATS AT THE LEVEE

These boats carry all sorts of freight up and down stream. Note the high roomy deck for passengers and the long gang-planks.

weeks to unload the vessel. This cargo filled two hundred cars, making eight trainloads, all of it going to the Middle West to compete with that entering by way of New York. As there are generally one hundred and thirty-eight pounds in a bag, you can figure, if you like to do sums, what proportion of this cargo your family consumed in a year.

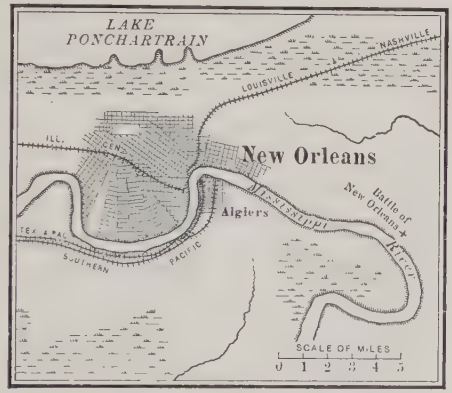
But it is as a banana port that New Orleans is especially noted, more bananas entering here than at

any other port in the world, and the unloading of a banana steamer always draws an interested crowd. About 12,000,000 bunches were landed here in a recent year, chiefly from Honduras, Costa Rica, Bluefields, and Panama. The largest steamer of the United Fruit Company can carry 60,000 to 70,000 bunches. Everything possible has been done to dispatch the unloading of these steamers. They are moored under curious tall yellow structures called "Banana Conveyors," which have high projections like those of a grain elevator. From the conveyor swings an endless chain of pockets which goes down into the hold and up through the conveyor to the deck. As fast as the chain turns, the pockets are filled and rise into the sheds, where negroes in long files stand ready to carry the bananas into the cars waiting alongside. It is a pretty sight, the masses of green fruit on the shoulders of the bronze porters bearing them to the cool darkness of the car. As soon as one car is filled, it is shunted

A BANANA CONVEYOR

to a siding; and when a train is made up, it has the right of way over all other fast freight, sometimes even over the United States mail, so perishable is the cargo it carries.

The most picturesque feature of the river front is the Mississippi River steamboat. Light of draught, with paddle-wheels at stern and two tall smoke-stacks topped with a bit of iron filigree, it is not only beautiful but admirably fitted to feel its way among the treacherous river shallows. Two huge gangplanks poised dangerously in mid-air are a necessary part of each boat's equipment, for when the river is too low for the boat to tie up at the wharf, they are let down over the mud flats forming a safe and easy bridge. The names of the boats are most attractive. It is hard to decide whether to take passage on the "Belle of the Bends," the "Pride of the River," or the "River Belle." But a journey on any of them is likely to interest one who has



NEW ORLEANS AND VICINITY

Steamships from New Orleans ply to these important ports: New York, Liverpool, Hamburg, Havana, Vera Cruz, Bluefields, and Panama.

never sailed on a river which flows on top of the country instead of in a nice little bed below it.

An intimate acquaintance with the commerce of New Orleans is the best introduction to the city a stranger could have, for in a stroll along the levees he is looking at the realization of the dreams of its founder. If we go back in imagination to the year 1718, when Bienville, governor of Louisiana, selected the site for his city, we shall feel sure that it needed a prophet's vision to plant a colony on this spot and to make it the capital of the vast domain of Louisiana. Nothing worth accomplishing is easy in this world of ours, and it is true in the history of cities as of men that, though certain favorable conditions may account for their success and importance, it is very often in the face of serious obstacles that they rise to greatness. This is especially true of New Orleans. Bienville was far-seeing enough to realize that at the outlet of the fertile Mississippi and its tributaries a commercial port must grow up. Had it been possible for him to locate at the mouth of the river, it would not have been advisable; for a port must serve two masters, the hinterland, or back country, and the ocean highways, so it must get as near to the one as it can while keeping its hand on the other. New Orleans is 110 miles from the mouth of the Mississippi, by this means drawing to itself all lines of inland communication. The river is kept open for ocean ships by constant dredging

and by controlling jetties. Situated on slightly rising ground between Lake Ponchartrain and the river, Bienville's little settlement was considered to be safe from attacks by hostile Indians, and favorably located to fulfill its destiny of a gateway into and out of the continent.

But the odds were heavy against his undertaking, and only recently have the greatest of them been removed. New Orleans is two feet below the high-water line of the river, and all that

A SCENE IN THE FRENCH QUARTER

Note the pretty iron balconies and the narrow and poorly paved street.

keeps the floods from the city are earthen walls or levees that have been built along the river-bank. These are watched with the greatest care, and piles of sand bags are always on hand with which to

repair the least sign of weakness in this protecting bulwark. The ground is naturally so marshy that until 1904 New Orleans never had a cellar. The water-soaked ground offered no secure foundation for high buildings; and when it rained in deluges, as sometimes happens, the water collected in pools in which mosquitoes bred, and these brought yellow fever. All the drinking water of the city came from the clouds and was stored in large cisterns, one or two of which stood in every yard. For nearly two hundred years the people of New Orleans suffered from discomfort, inconvenience, and disease, the natural result of these unsanitary conditions; but to-day it is one of the healthiest cities in the United States, — it is sewered and drained, and has a pure water supply filtered from the Mississippi. As there is no natural drainage, the city being flat, these improvements required much engineering skill. The sewage has to be pumped up and out, and the water pumped in, but a new spirit of energy in its people has conquered these difficulties. The ground, now thoroughly drained, can support proper foundations for the up-to-date "sky-scraper," and it will not be long before New Orleans will be supplied with many of these modern business necessities.

The Crescent City has outgrown its name, having in recent years spread along the curving river in the form of the letter "S." In the days when it was peopled by the French, it occupied a little

half-moon on the northward loop of the river. This is the "French Quarter," still quaint and interesting. The streets are narrow, the houses low and built around courtyards, where in French and Spanish days much of the home life centered. A fountain played there, and palms and flowers grew luxuriantly; there mothers knitted and gossiped while children romped. To-day these courtyards are shabby and neglected, and modern houses are turning a cold shoulder to the pretty balconies with their lace-like iron fronts that have been a charming feature of New Orleans. French is still spoken in the old quarter, and the streets bear their early names — Bienville, Dauphine, Royal, Rampart. Canal Street divides the French quarter from the American. It is said there were formerly French residents who prided themselves on never having crossed Canal

A COURTYARD IN THE FRENCH QUARTER

Street, but this old prejudice has now entirely disappeared.

The streets in New Orleans are curiously irregular as a result of the shape of the city; and many of them have astonishing names. Napoleon has his name fastened to a broad thoroughfare, and on either side are his victories — Jena Street, Berlin, Milan, Marengo, and Austerlitz Streets. In another part of the city are the names of the Nine Muses. Can you pronounce them? They present difficulties even to the inhabitants, and one hears many varieties of Terpsichore Street, Melpomene, and Euterpe. In another section is Industry Street, and near by Abundance, Felicity, and Piety Streets. It might be inspiring to live on Genius Street, or on Good Children Street, but if you prefer more classical names, you can choose Socrates or Brutus or Solon. Some of these thoroughfares belie their names, as Elysian Fields, where we picture happy folk walking through flowery meadows by rippling streams. Alas, the reality is a long dreary avenue given over to freight cars, warehouses, and repair shops.

New Orleans looks as if set in the midst of a garden, for in its mild moist climate vegetation flourishes. Here the temperate and tropical zones meet; palms, live-oak hung with Spanish moss, banana, orange, lemon, fig, and camphor trees grow side by side with maples, willows, oaks, and other trees to which Northern eyes are accus-

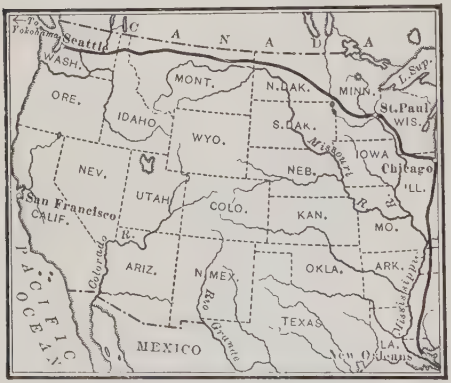
tomed. There are many parks and open squares for breathing-places, and soft southerly winds from the Gulf make the winter delightful. Though the rainfall is heavy, so much falls at one time that the city has more sunshiny days than its sister cities in the Northwest, where it rains a little at a time and, during the winter, nearly every day.

THE SHADE TREES OF THE SOUTH

Many streets in New Orleans are bordered with these trees.

You cannot be long in New Orleans without realizing that as a commercial port and a manufacturing center it has many advantages. The moist climate makes it possible to spin cotton to advantage, and other raw materials are either close at hand or can easily be transported. The largest sugar refinery in the United States is here, its group of tall chimneys making a conspicuous landmark in the level country. Around the city sugar plantations are everywhere, and as cutting-time draws near, the newspapers have a great deal to say about the

prospects for a good crop, for just as wheat holds the scepter in Chicago and Kansas City, so sugar is king in New Orleans. Because of its water connection with the interior, coal is brought cheaply from Pittsburgh and the Middle West. Six great railroad lines have their terminals here, and the jetties at the mouth of the river give a channel deep enough to accommodate the largest vessels. The people of New Orleans have been benefited by the completion of the Panama Canal, for this shorter route to the Indies, to western South America, and to our own Pacific Coast has greatly increased the commerce of the city. From New Orleans to San Francisco by way of Cape Horn is 13,650 miles; by way of Panama the distance is only 4700 miles. From New Orleans to Callao *via* Cape Horn is 10,100 miles; by way of Panama it is only 2750 miles. From Chicago to New Orleans and Callao will be an almost north-south trade route; but there is no one bold enough to



THE GREAT NORTHERN RAILROAD'S COTTON ROUTE TO ASIA

foretell all the new tides of travel and trade which will flow to and through the Crescent City in the new era which it is awaiting.

QUESTIONS FOR STUDY

1. Make a list of all the cities mentioned in this chapter and write them opposite the countries to which they belong. Learn their location.
2. What is hemp? In what countries is it found, and for what is it used beside bags? For what purpose is hemp used in harvesting machines? Trace the route of Manila hemp to New Orleans and Chicago. Name the bodies of water crossed.
3. On an outline map of the world draw with heavy lines the "cotton streams" from Galveston and New Orleans to Liverpool and Manchester, to Havre and Rouen, to Hamburg and Chemnitz, to Cologne and Elberfeld, to Boston and Lowell. Print neatly the names of the ports exporting and importing cotton, also the names of the cotton-spinning towns near each port.
4. To what country does the cotton exported by way of Seattle go? Draw the route of this "cotton stream" across the Pacific.
5. What products come to New Orleans from Costa Rica and Honduras? Name and locate the port of each of these countries.
6. Write a composition comparing the climate in your home in winter and summer with that of New Orleans. Tell also what differences there are in the trees and plants of both places. What wind brings rain to New Orleans?
7. Draw a plan of the way your town is laid out and compare it with the Crescent City. Find out how the principal streets of your town received their names.
8. How old is the community where you live? Is it older or

younger than New Orleans? Who founded it? What cities of the United States are older than New Orleans?

9. Explain the advantages in the situation of a city at the head of a bay or up from the mouth of a navigable river. Compare Baltimore and Norfolk in this respect; Portland and Astoria. In each case, which is the larger city?
10. Turn to the "Rules governing the Location of Cities" (Appendix, page 203), and learn that rule which seems to you to apply best to the development of New Orleans.
11. Draw a plan to show how railroad, river, and ocean traffic center at New Orleans.
12. What articles from Central and South America reach Chicago by way of New Orleans? What effect has the use of the Panama Canal had on the trade between Chicago and the Pacific Coast? Name some products of the Pacific Coast that might reach Chicago *via* New Orleans instead of overland. (Consult the chapter on San Francisco for your answer.)
13. Tell some of the disadvantages of living in New Orleans in the early French days.
14. What river in China has many features like that of the Mississippi? What makes it so difficult to control the floods in both these rivers? Tell some of the difficulties and hazards that are a result of living near a river that flows on top of the land. What is a levee?
15. Which dependencies of the United States supply us with sugar? Why should San Francisco, New York, and New Orleans have large sugar refineries? Where does the coal that runs the refinery in New Orleans probably come from? By what route? (See chapter on Pittsburgh.)

EXERCISES FOR WORLD REVIEW

1. Compare New Orleans and Buenos Ayres as to —
   (a) location (note latitude as well as other facts);
   (b) climate;

(c) size;
(d) people, language spoken;
(e) exports.

Arrange these facts in the form of a chart, as below, or write them in paragraphs.

2. Fill out the blanks in the following chart. Locate the countries, tell the kind of climate necessary to raise sugar cane, name the ports which export sugar, and the cities of the United States which import and refine sugar.

Six Leading Countries producing Cane Sugar

Countries	Location	Climate	Export City	Cities of U. S. Refining Sugar
Cuba.....				
Java.....				
Hawaii.....				
United States..				
Porto Rico.....				
Brazil.....				

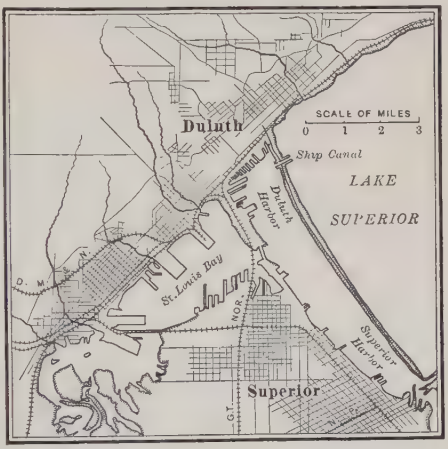
3. Find four cities in Europe, four in North America, and two in Asia that are situated on navigable rivers several miles inland. Explain in each case the advantages of such location. Make a sketch map of the location of one of these cities and compare it with that of New Orleans.

DULUTH, THE ZENITH CITY OF THE UNSALTED SEAS

IN the northern part of Minnesota, in a wooded country full of lakes and streams, lie the sources of two rivers, one flowing to the east through the Great Lakes, and one to the south. Here, near the head of Lake Superior, is a great water-parting or divide, and here in early days the Indians came from all directions to bargain with French fur traders or to arrange terms of peace. In those days French and Indians might well have said, "All trails lead to the Great Portage"; to-day the people of Duluth will tell you, "All roads lead to Duluth."

With these facts in mind, we can understand how the nickname, the Zenith City, came to be applied. The origin of its real name is quite as interesting, but history, not geography, gives us the key to that. Daniel Greysolon, Sieur du Luth, a brave soldier of France, came to New France to help in extending the fur trade, and to explore the West. In 1679, at the Great Portage near where Duluth now stands, he called a council of the warring Indian tribes, who declared a peace with each other and with France. Nearly two hundred years later the pioneers who settled Duluth met at a picnic to decide upon a name for their town.

No name that was suggested suited the assembly, until finally a Rev. Mr. Wilson arose, and giving a brief history of the place, proposed "Duluth." Instantly the audience clapped their hands, sprang to their feet, and then and there voted to adopt the name.



DULUTH AND SUPERIOR

Note the ship canal, and harbor. Refer to the illustrations on pages 76 and 83. The principal railroads entering Duluth are: The Duluth, Mesaba, and Northern; the Chicago and Northwestern; the Great Northern; and the Northern Pacific.

It is a fine thing for a boy or girl to be brought up in a town where the motto of every one is "Do it for Duluth." To carry this out may mean sacrifice and service, but history has shown that the people are always ready. After the railroad came to the city in 1870, business increased so that it became necessary to improve the harbor by cutting a canal across Minnesota Point. This would give an easier entrance than to go around the point to the natural opening. Across the bay is the city of Superior, in the State of Wisconsin, but sharing with Duluth the benefits of the beautiful bay a mile

wide and seven miles long. Superior, having a wide outlet to the lake, hoped to be the greater city; and she was alarmed when she saw what Duluth was doing. Hurriedly the people appealed to the United States Government, claiming that the new canal would shallow their channel and injure their harbor. But before the Supreme Court could act every man, woman, and child in Duluth who could handle a shovel went down to Minnesota Point and began to dig. Day and night they worked, and the canal was cut through before the order to

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DULUTH HARBOR AND MINNESOTA POINT

Note the ship canal, shown in detail on page 83.

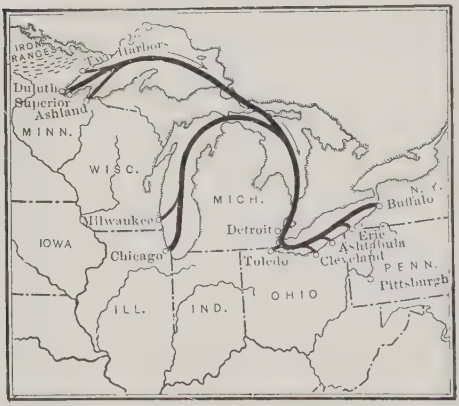
stop it came from the Court! To-day there still exists a rivalry between the two cities, but the unfriendliness of those early days has given place to a feeling of mutual good-will.

The city has a beautiful situation. In front are the blue waters of the biggest fresh-water lake in the world, an inland sea in very truth, while back of the town rocky hills rise in terraces to the height of six hundred feet. The townspeople have a joking way of saying that Duluth is thirty miles long, half a mile wide, and a mile high, but if you had to climb the steep streets to your home you would think the saying no joke. How many famous cities are on steep hillsides! Genoa rises abruptly from the sea, Rome is built on seven hills, and Quebec's steep cliff overlooks the St. Lawrence. In the early days people settled on hillsides to be secure against sudden attacks from enemies. Duluth has no foes to fear; so instead of cannon on the hills, there are beautiful homes and schools and boulevards, and the bracing air and the electric car help the people to climb the steep inclines.

The Zenith City is young. Boston was about two hundred and twenty-five years old when Duluth was born, and though at first the town grew very slowly, it has taken a great leap since 1880. It is with the planting of cities as with the sowing of crops; not all seeds that are sown sprout, nor do all settlements grow into towns. There must be something in one locality more than in another to attract people in large numbers; let us see what it is at Duluth.

Where a land route ends and a water route

begins, or a water route ends and a land route begins, goods and passengers have to be moved from one kind of carrier to another. This is called a *break* in transportation, and some sort of settlement always springs up at such a point of transfer. Whether it will be a village or a city depends largely on the amount of goods to be carried. One of the oldest of modern cities, London, is at such a break, and you will find many others. Most of the cities on the Great Lakes have this reason in common for their beginning, but as it is the amount of freight passing through a place that makes business, Buffalo and Chicago have grown larger than the other Lake ports.



ROUTES OF ORE SHIPMENTS THROUGH THE GREAT LAKES

Duluth is at the head of the greatest inland waterway in the world, and in the center of a region that furnishes three great products; therefore the chief business of the city is gathering and distributing, loading and unloading. Pine from the forests on the shores of Lake Superior is sent to

Duluth, where it is sawed, piled in great yards on the water front, and shipped down the Lakes or by train to the people of the prairies. From the Western prairies in August and September, come the products of the grain-fields, wheat, barley, oats, rye, and flax. Wheat is the most important. Duluth and Chicago are the two Lake ports that receive most of the hard spring wheat, which makes the best flour in the world. One year ninety million bushels came to Duluth. It is hard to picture

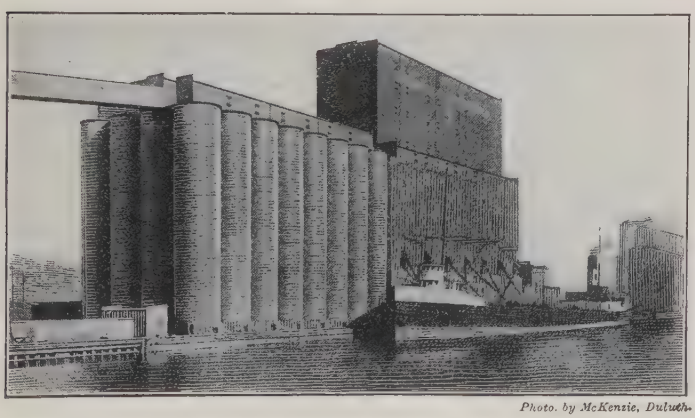


Photo. by McKenzie, Duluth.

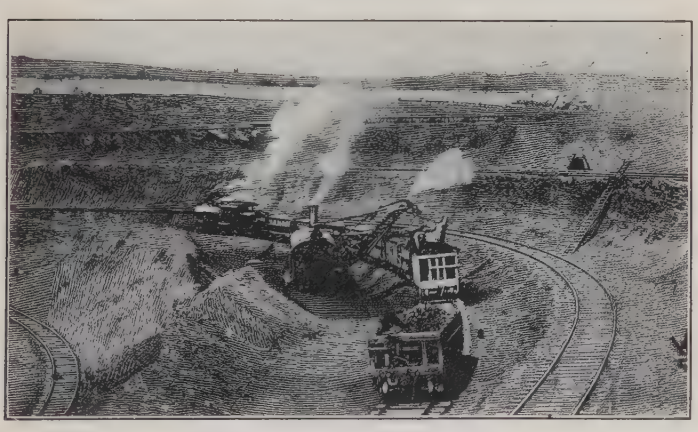
A GRAIN BOAT LOADING WITH WHEAT
Note the modern steel and cement elevators.

such a quantity. If you enter the city by the way of the lake you will see a number of tall "sky-scrapers" standing on the outer edge of the harbor. These are grain elevators where wheat is stored until it can be shipped. Duluth and Superior together have twenty-one of these elevators

holding in all 55,000,000 bushels. Three thousand years ago Joseph built for Pharaoh, King of Egypt, big granaries on the banks of the Nile to provide food for the starving people when there was a famine in the land; but whereas the Israelites and Egyptians carried the grain away by the sackful, Duluth and Superior ship it by the boat-load, each boat holding thousands of bushels. At every large port along the way, some of the grain is dropped, each city turning it into flour and distributing it.

But there is a third and greater product that goes through Duluth; it is iron ore. In the northwest part of Minnesota is the Height of Land, low ranges running east and west, and this region, a wilderness in 1890, is now the greatest producer of iron ore in the world. This is not only because there is so much iron there, but also because it lies so near the surface and is so soft and pure that it can be dug out without the blasting and tunneling that make underground mining so costly and dangerous. At Hibbing, one of the mining towns in the Mesaba Range, there are several of these open pits, the largest one measuring a mile and a half in length and half a mile across. Tracks are laid into the pit, and steam shovels scoop out the ore and throw it into cars, — steel cars made in Pittsburgh out of the iron they carry down from Hibbing. Long trains of forty to fifty cars are run to the top of the mine, and once there it is *downhill all the way to the Lake Erie ports.* A long slide,

you say; indeed it is, but it costs so little to mine the ore and to carry it on the Lakes, that the steel manufactories of Pittsburgh and Cleveland find it cheaper to get iron from Minnesota than to dig it from the rocks of Pennsylvania. At Superior and Duluth the cars run on to long docks, some of them extending half a mile into the harbor. There



STEAM SHOVELS LOADING ORE

In one of the mines in the Mesaba range. Note that tracks are laid on several levels.

the bottom of each car opens, and the ore falls below into big hoppers and runs down long spouts into the ore boats moored alongside the docks. The largest ore boat afloat is six hundred and five feet long and holds 15,000 tons. How swiftly these boats slip through the water! There is need of speed, for navigation is open only eight months in the year, and enough ore must be piled up at

Pittsburgh, Cleveland, and other Lake ports to keep the blast furnaces and steel mills running all winter.

The State of Minnesota realized when these rich deposits of ore were found that they belonged to the people of Minnesota, so though private companies own the mines, for every ton of ore mined they must pay a certain sum into the State Treasury, and this money is devoted to education. This accounts for the beautiful schools in these mining towns, buildings much finer than any houses the inhabitants occupy.

THE DULUTH HIGH SCHOOL
One of the finest buildings of the kind in the country.

Hibbing is a curious place; surrounded by the mines, it is built on iron, and any day a house may have to arise and walk to another foundation because they must dig for iron under it. It is a common sight to see houses moving slowly along the streets looking for new resting-places. The ore is buried under a blanket or cover of gravel, sometimes a few feet, sometimes eighty feet in thickness. This cover is taken off during the win-

ter when the ore cannot be mined. As the ground freezes hard it has to be blasted, so the little frame houses in the town are constantly shaken and the ears of the citizens deafened by the cannonading. One would think the inhabitants were in a state of siege. The "strippings" are piled up in great plateaus outside the pits. If the mine owners lived there, very likely they would plant these hills and turn them into pretty hanging-gardens or parks. But they live far away in pleasanter places; probably some of them have never seen the place their money comes from.

STEEL ORE BOAT IN DULUTH SHIP CANAL

Note the Aerial Bridge over the canal. Persons wishing to cross the canal are carried over on the traveling draw suspended from this bridge. Compare with the view on page 76.

You now know something of the great carrying service Duluth does; but has it occurred to you to ask if all these boats that go eastward so heavily laden return empty? That would be a very one-sided and costly service indeed, hardly a service at all; for all this northern part of the Middle West lacks one of the chief necessaries of life, namely, coal. So at the ports where the ore and

grain are unloaded, another loading process goes on quite as wonderful as these just described, and Duluth and Superior become receivers and distributors of fuel. Nor is this all; beside this bulky freight which acts chiefly as ballast, the boats bring back manufactured goods, plows and harvesting machines, hardware for use indoors and out, in home and factory, clothing and furniture, books and articles of luxury that are needed by the people of these States; and in this way Duluth has become such a distributing center that ten railroads enter the city now where there was one in 1870. In view of these facts, it is not difficult to believe the claim that Duluth made in 1905 to be the port of greatest tonnage in the world.

It is not strange that the people of the Zenith City are energetic in the present and hopeful for the future. Blessed with a healthful climate and a soil fitted to produce excellent harvests, at the head of our Inland Seas, and on a transcontinental line that reaches out across the Pacific, Duluth has good reason to hope that it may one day be a central point on a great world highway, that shall traverse not only the unsalted seas but the oceans and the countries beyond them.

QUESTIONS FOR STUDY

1. Tell why a settlement is likely to grow up at a break in transportation. Find ten cities in the United States located at such a point of transfer. Which of these cities

are among the "Twenty-five Largest Cities in the United States"? (Consult the list in the Appendix, page 204, for your answer.)

2. If the average load of a freight car is 66,000 pounds, how many cars would it take to haul the 90,000,000 bushels of wheat that came to Duluth?
3. Did you ever see a grain elevator? Explain its use. Where are such buildings located?
4. What is the meaning of zenith? How does it apply to Duluth?
5. What is the origin of the name of your city or town? Tell the story of its origin, and of the founding of the town.
6. Find out the chief reasons for the location of the place you live in. Is it at a break in transportation? Write answers to Exercises 5 and 6 in the form of a composition for your English work.
7. Examine the map, showing the location of Duluth, and tell how the ship canal is an advantage to its commerce.
8. State as many reasons as you can for the location of cities. Illustrate each by an example of a city. (Consult "Rules governing the Location of Cities," Appendix, page 203.)
9. Explain how Mesaba ore is mined and how it reaches the blast furnaces at Pittsburgh, Chicago, and Gary. What is a blast furnace?
10. On an outline map of the United States draw the route of the iron ore down the Lakes to Chicago, Cleveland, Erie, and Pittsburgh. Locate on this map the iron mines, the shipping ports, and the chief manufacturing cities which receive the ore. Measure the distance from Duluth to Cleveland and write this on the map. (Use the scale of miles on the United States map in your geography textbook.)
11. Write a composition on "Our Inland Seas," telling the facts about them that interest you most.

12. In which part of North America do you find French names? Spanish? Make a list of the French names you find on or near the Great Lakes; the Indian names.

EXERCISES FOR WORLD REVIEW

Opening and Closing of Grain Ports of the World

St. Petersburg	Close	November 20
Montreal		December 1
Duluth		January 15
Odessa		Free from ice
St. Petersburg	Open	April 21
Montreal		April 10
Duluth		April 16
Odessa		Free from ice

1. Compare the length of the *open* season of each port with that at Duluth. Which has the longest season?
2. Look up references in the Index of your geography textbook under "Iron." Locate chief iron mining centers in England, France, Germany, and the United States. Name a city in each center.
3. Name five cities in Europe, five in Asia, two in Africa, and two in South America that are located at a break in transportation.
4. Where is the "Soo" Canal? Compare it with the Suez and Panama Canals as to location, winter temperature, rainfall, products of country, cities. Put these facts in the form of a chart as below, or draw a map of each canal arranging facts neatly.

Comparison of Three Great Canals

	"Soo" Canal	Suez Canal	Panama Canal
Location			
Waters connected			
January Temperature			
Rainfall			
Products			
Cities			

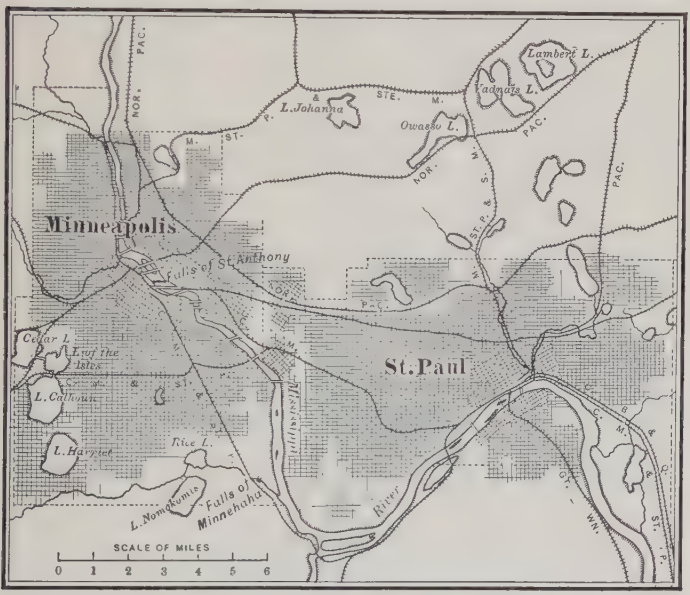
MINNEAPOLIS AND ST. PAUL: THE TWIN CITIES

MINNEAPOLIS and St. Paul are not the only "twins" among our cities. A little thought will show you that it is not uncommon for two, and even three, or four towns to grow up near a common center because of specially favorable geographical conditions. The four cities of San Francisco Bay share in the advantages of that vast landlocked harbor. Around New York Bay lies the most splendid city group in the whole world. New York, Brooklyn, Jersey City, and Hoboken — we might almost add Newark — are flourishing cities because of the opportunities for trade and manufacture offered by their unrivaled location. Sometimes these adjacent cities unite under one government, as New York and Brooklyn, and Pittsburgh and Allegheny City have done, because in this way their common interests can be better served. Often a state boundary prevents this union, as in the case of Duluth and Superior, New York and Jersey City.

In all the cities you have thus far studied, you have found some geographical feature the determining cause for their location. This is equally true of Minneapolis and St. Paul. A few miles above the point at which the Minnesota River enters the

Mississippi, the latter leaps over a ledge of limestone rock making the famous St. Anthony Falls. Below the falls the river flows swiftly for a few miles, then settles down into a placid waterway for the most part undisturbed by rapids to its mouth. At the place where river navigation began or ended, a little trading-post known as St. Paul grew up in the early part of the nineteenth century, relying for protection on the guns of Fort Snelling, which the United States Government had built at the junction of the Minnesota and Mississippi Rivers to guard the northern frontier of the newly acquired Louisiana Territory. It was natural that a settlement of some sort should spring up at the point where the little boats of that early day had to stop because of shoal water. French and English fur traders had long kept the Indians of this Northwest country busy during the hunting season, for furs were very fashionable in Europe and could be bought cheaply in the New World. To this point the Indians and traders came with their furs, and scattered settlers bought food and other supplies at the rude country store. By 1851 there was a lively summer trade between St. Paul and settlements on the Red River. Long trains of ox-carts filled with furs filed into St. Paul, the creaking and groaning of their cumbersome wheels announcing their arrival from afar. As new settlements were made, the town became the base of supplies for all the Northwest, and St.

Paul began to prosper just as Seattle did during the rush of the gold-seekers to Alaska. In the year of the great "boom" after the knowledge of



MINNEAPOLIS AND ST. PAUL

The principal railroads entering the "Twin Cities" are: the Northern Pacific; the Chicago, Milwaukee, and St. Paul; the Chicago, Burlington, and Quincy; the Chicago and Great Western; the Chicago and Northwestern; and the Great Northern.

the fitness of the prairie soil for wheat had spread over the country, the steamboats brought 30,000 people to St. Paul, whence, after buying their supplies, they scattered over the prairie. The packet boats did a thriving business that year, and for many thereafter; but as modern progress insists on quicker carriage and communication, these

boats have practically gone out of commission. The city has, however, kept its character as a central distributing point. Ten separate railroad systems center here, making the "Twin Cities" easily reached from every part of the continent. The deepening of the Mississippi is already under way; perhaps by the time you are ready to go into business, increased river traffic may tempt you to

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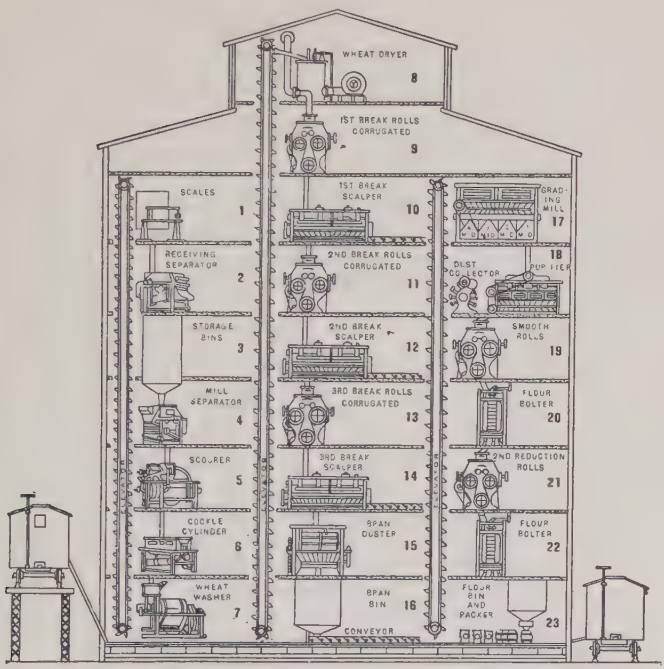
THE MISSISSIPPI RIVER FROM HIGH BRIDGE, ST. PAUL

try your fortune in one of these cities. The chief fur market of North America is still in St. Paul, and manufacturing thrives because power from the falls can be utilized and the many railroads fetch and carry quickly. St. Paul is also the capital of the State, though you may think it is not very centrally located for that purpose; but then, what of Boston, Helena, Topeka, Cheyenne, and Albany?

If the Falls of St. Anthony had an indirect influence on the location of St. Paul, their turbulent waters have been the making of Minneapolis. A waterfall means power, for the force of falling water can set a wheel in motion, and by means of gears and belts and armatures can generate electricity and so set engines to work and machinery to running. The soldiers of Fort Snelling were the first to use this power. In a rough sort of mill which they built in 1822, they sawed the logs necessary for their barracks. When their work was finished they closed the door of the little mill, and for many years the waters of the Mississippi frothed and tumbled at their own sweet will between the rocky bluffs. Then some adventurous New England people pushed their way to this frontier, a sawmill was built on the east bank of the river, and the little town of St. Anthony was begun. This is to-day the old part of Minneapolis, where the great State University crowns the bluff and the broad avenue leads directly to the splendid State Capitol in St. Paul.

MINNESOTA STATE CAPITOL AT SAINT PAUL

So Minneapolis was first a lumber town, and still is. From that day to this the harnessed falls have driven the steel teeth of the saw into the pine logs of northern Minnesota until those great forests are a thing of the past, though Minneapolis continues to be one of the great lumber centers of the world, sawing in a recent year over 594,000,000 feet of lumber. With the establishment of sawmills many kinds of factories gathered around the falls, — planing-mills and factories for making sashes, doors, blinds, and shingles. But in spite of this, the lumber industry alone would never have brought about the rapid growth of the " Twin Cities," for you must realize that when a tree is cut down, unless another tree is planted in its place, it means so much less feet of lumber in the world. As lumber companies have not as a rule planted trees, you can easily understand why the amount of lumber furnished to the Minneapolis mills is constantly growing less. No, the foundation of the prosperity of the " Twin Cities " lies in the golden wheat harvests of Minnesota and the Dakotas. The early farmers who settled in the Northwest had found that northern climate with its long hours of summer sunshine wonderfully adapted to the cultivation of spring wheat, but its kernel was wrapped in a hard gritty covering and the flour was so dark people objected to it. Then millers went to work to discover a method of manufacture which would remove these difficulties. They visited various



Courtesy, Washburn Crosby Co.

SECTIONAL VIEW OF A SIMPLIFIED FLOUR MILL

This gives a connected idea of the milling process without bringing in many confusing details. The processes may be described briefly as follows: (1) Scales, for weighing wheat as it is received. (2) Receiving separator, for separating other kinds of seeds from wheat. (3) Storage bins, for reserve supply of wheat in advance of mill requirements. (4) Mill separator, for further separating foreign seeds from wheat. (5) Scourer, for removing dust from wheat kernels. (6) Cockle cylinder, for removing all round seeds. (7) Wheat washer, for thoroughly cleansing the wheat. (8) Wheat dryer, for drying wheat after washing. (9) 1st break rolls, for rupturing bran, enabling bran and germ to be separated from interior. (10) 1st break scalper, for sifting middlings through bolting cloth to separate from bran. (11) 2d break rolls, for further loosening the middlings from bran. (12) 2d break scalper, for separating more middlings from bran. (13) 3d break rolls, for further loosening middlings from bran. (14) 3d break scalper, for final separation of middlings from bran. (15) Bran duster, for dusting low grade flour from bran. (16) Bran bin, for packing bran for shipment. (17) Grading reel, for separating middlings by sifting through various sizes of bolting cloth. (18) Dust collector and purifier, for cleaning and purifying middlings by air and sifting. (19) Smooth rolls, for grinding purified middlings very fine to flour. (20) Flour bolter, for sifting flour from purified middlings. (21) 2d reduction rolls, for further grinding of purified middlings. (22) Flour bolter, for separating flour from purified middlings of second grading. (23) Flour bin and packer, for packing flour for shipment.

milling cities of Europe, especially Budapest, in whose mills the old-fashioned grindstones had been discarded and a new process of crushing the wheat berry between heavy rollers had been installed. They returned with new ideas and began to make inventions and to introduce new machinery. The result was astonishing; Eastern farmers dropped their hand plows on their rocky upland farms and rushed to the Northwest to harvest with the reaper and binder and giant threshing-machines. This news spread to Norway and Sweden and Germany, and immigrants poured into the new land. Railroad builders became prophets and laid iron rails across the open prairie where there was no sign of habitation. Sometimes the rush of new settlers was so great that, as soon as it was known just where a railroad line was going to be laid and stations located, a body of enterprising folk would push on in advance and the town would be built before the track had reached it. At all these stations grain elevators were among the first buildings to be erected; even to-day, as you cross the wheat country on the Northern Pacific or Great Northern Railway, the looming on the horizon of one of these ungainly structures will often be the first sign of an approaching town.

Since this period Minneapolis has become the greatest flour-milling center in the world. It could hardly be otherwise. The Red River Valley has been called "the bread basket of the world," and

Minneapolis holds in its grasp the long spout-like handle though which a continuous stream of grain is fed to its elevators and mills. It seems as if all the busy life of this city buzzed and hummed because of lumber and grain. Twenty-four flour mills with a capacity of 88,000 barrels a day must mean that many people are working. There are fifty-one elevators in Minneapolis holding over 40,000,000 bushels, with machinery for weighing and lifting the grain, cleaning it, and spouting it into the mills or waiting cars. This grain is brought from the country elevators by the train-load, and during the rush season in early fall terminal elevators, railroads, and storage yards are doing a mighty business. The following clipping from the New York *Times* will show how long beforehand this movement of the crop eastward must be planned for:—

10,000 NEW GRAIN CARS

Northwestern Railroads Need Them to Move the Crops

MINNEAPOLIS, MINN., July 22.— Nearly 10,000 grain cars are being built by roads having headquarters and terminals in the Twin Cities according to officials of the roads to-day, who declared that the cars would be rushed to grain-producing points in order that there may be no dearth of rolling stock.

Officials say that every one of the new cars will have been distributed throughout the Northwest by September 1.

Imagine the endless lines of freight cars which roll into Minneapolis during September and October! To empty these, switch them out of the way, and send them westward again is a knotty problem for the railroads. As soon as the grain arrives it must be inspected, and each morning State inspectors go to the railroad yards, take samples of the grain, examine, and grade it. In 1909 over 130,000,000 bushels of grain were received in Minneapolis. Where did the money come from to pay for such an amount? Just as the railroads plan ahead for cars to move the grain crop, so must the bankers arrange to have money in their vaults to meet this demand. As the crops move east, gold moves west, so that the fall is the bankers' rush season as well, when it is not uncommon for them to pay out half a million dollars in a day. This money comes back to the cities in various ways; farmers buy tools and farming machines here, millers their machinery as well as flour barrels and bags, and the farmers' wives and daughters send to the "Twin Cities" for pianos and sewing-machines, the latest books and household conveniences. Thus it is that the "Twin Cities" have become the great financial center of these Northern States as well as their industrial and trading metropolis.

Perhaps by this time your thoughts have leaped ahead and you are questioning if what is true of these cities in one great wheat section of the

THE MILLING DISTRICT OF MINNEAPOLIS

Note the grain elevator, the falls supplying power to the mills, and the bridges connecting St. Paul and Minneapolis. In the distance may be traced the line of the level prairie.

United States is true also in other wheat centers across the seas. This will be an interesting quest for you to follow, and before you have looked very long you will be certain to spy out Budapest, the capital of Hungary. This city has so many parallels with our "Twin Cities" that it will be worth while to consider them. Buda, the old town, and Pest, the newer city, have long been towns of importance. Standing where rocky walls and a large island in the river offered the best place for bridging the Danube before it spread out on the open plain, roads from the west and north converged across this bridge to radiate to the towns of Hungary on the east and south. Budapest, the

now united city, is therefore an important railroad junction. To this central point have been brought since early times the wheat and corn of the fertile acres of Hungary, to be ground into flour and meal and distributed among the cities of Europe. As a flour city, Budapest has long been famous; and though Minneapolis has left it far behind in the race, it has, in a certain sense, been the "mother" of the inventions which have made the "New Process" flour of Minneapolis mills known the world over.

We may follow our comparisons between these cities even further. Both city groups are on navigable rivers. Each is at the outpost of a rich territory; Hungary has her fertile open prairies like those of the "Twin Cities"; the mountains north of Budapest are densely forested and contain mineral wealth, and though the pine forests of Minnesota are now no more, there is still untold wealth in the low iron ranges of the Height of Land; Budapest was selected by the Romans as a site for a camp or fort to guard the frontier of their dominion, and you have seen how the "Twin Cities" were linked with the erection of Fort Snelling. Strange as the likeness may seem, all these cities look down on wooded islands. The outdoor loving Budapestians play, bathe, and eat in their city park on Margaret Island; on Harriet Island the boys and girls who live in the crowded part of St. Paul have a delightful summer play-

ground, and the upper end of Nicollet Island was formerly a fashionable residence district of Minneapolis.

In some respects the Old World city is ahead of its new rival; its streets are cleaner, and its inhabitants take life more leisurely and have more time to play. When Minneapolis and St. Paul are as old as their Hungarian twin, they may have learned more wisdom. As it is, they have done so much in fifty-four years that we may forgive them this fault. Who would have dreamed that in little more than half a century a city group of over 500,000 people would replace a wilderness! The city builders who did this work did not confine their efforts to creating big industries alone; they were wiser than that. Schools went up side by side with sawmills and flour-mills, and the great State University at Minneapolis offers to the poorest child the possibilities of a college education. Of late years both cities have drawn within their limits a series of parks that can hardly be matched for loveliness. Lakes,

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THE UNIVERSITY OF MINNESOTA

ravines, the romantic Minnehaha Falls, wooded ridges, the bordering river bluffs, make an enchanting whole which offers health and happiness to the future as well as to the present inhabitants of the "Twin Cities."

QUESTIONS FOR STUDY

1. Learn the location of each of the city groups mentioned in this chapter. Look for other twin cities on the map of the United States. What city is opposite Omaha? Kansas City? Cincinnati?
2. Point out on the map the territory known as the Louisiana Purchase. What river drains this territory? What two rivers did Fort Snelling control? Show how its location was important in those early days. What do you mean by a *frontier?*
3. Group together those capital cities of the United States which are centrally located; those which are in the eastern part of the State; those which are in the western part. Which of these three locations is most common?
4. What reason can you give for the selection of these cities as capitals: Boston, Carson City, Cheyenne, Albany? Remember that the capital should be near the center of population of the State. For what reason?
5. Compare the picture of the State Capitol at St. Paul with that of Denver. Tell something of the view you would get from each building.
6. Name other cities besides Minneapolis that have grown up at waterfalls. What group of States contains many such cities? What are the chief occupations in these cities? Give examples.
7. Examine the label on the bag or barrel of flour you have at home. Did the flour come from Minneapolis? Describe the route it took.

8. On an outline map of the United States locate Minneapolis, Duluth, Chicago, Milwaukee, St. Louis, Kansas City, Toledo, Buffalo, Portland (Ore.). Why should these cities be grain and flour centers? Which are located on or near the Great Lakes? Print the name of the State in which each is situated. Give a title to this map.
9. On the map used in Exercise 8, draw the route of the export wheat sent from Duluth to New York *via* the Lakes; from Kansas City and St. Louis to Baltimore. Which distance is shorter? Which route is more level? Write these facts neatly on your map.
10. Write a comparison between the "Twin Cities" and Budapest, telling how they are alike and how different. Do this either in composition form, or in a chart as suggested below: —

TWO "TWIN CITIES"

New World	Old World
Minneapolis — St. Paul	Budapest

11. Tell in one or two paragraphs what your home locality has done to provide outdoor recreation for its citizens. If you have no parks or playgrounds what steps could school children take to help secure them?

EXERCISES FOR WORLD REVIEW

WHEAT HARVEST CALENDAR

Wheat is harvested Somewhere every Month in the Year

January,	Australia, Chile, Argentina.
February–March,	Upper Egypt, India.
April,	Lower Egypt, India, Syria, Persia, Mexico, Cuba.
May,	Texas, Algeria, China, Japan.

June,	California, Oregon, Mississippi, Alabama, Virginia, Carolinas, Colorado, Greece, Italy, Spain.
July,	New England, and Middle Atlantic States, Illinois, Nebraska, Canada (east), Roumania, Austria-Hungary, Russia (south), Germany, south of England, France.
August,	Central and Northern Minnesota, Manitoba, British Columbia, Belgium, central Russia.
September–October,	Scotland, Scandinavian Peninsula, north of Russia.
November,	Peru, South Africa.
December,	Burmah, New South Wales.

1. Arrange this calendar in the form of a large clock-face, substituting the months for the hours of the day. With a movable hour-hand attached by a pin or paper fastener you can keep the class informed from month to month where wheat is being harvested.
2. Explain why the wheat harvest of Argentina is in January, and why wheat should ripen in Upper Egypt before it does in Lower Egypt. Which is nearer the Equator?
3. Be able to point out on the map every country named in the "Wheat Calendar." Compare all these countries as to their latitude. Which is farthest from the Equator? When is its wheat harvest?

CHICAGO, OUR INLAND METROPOLIS

CHICAGO, more than any of the Representative Cities, has been favored with a variety of nicknames, some of these originating in a spirit of playfulness, others in all seriousness, as descriptive of what the city really is. Of the latter sort is the name selected for the heading of this chapter — Chicago, *metro polis*, the *mother* or *chief city* of the vast inland region lying between the Rockies and the Alleghanies. The prettiest nickname, however, which has been given to Chicago is that of "The Garden City," a name that brings to mind the rolling prairies that stretch away from it on all sides but one. These prairies of Cook County form one of the richest agricultural districts of the Prairie State, and all about Chicago the country is like one great farm on which is raised food for the people of the city, and such an abundance of flowers that in the height of the season Chicago daily exports thousands of roses and carnations. Unlike most great cities, it has saved its gardens from destruction as it has spread out over the prairie, and has turned them into acres of wooded parks and broad shaded streets called boulevards, these forming a nearly complete chain around the city. To-day Chicago leads all cities of the United States in the

number of children's playgrounds; and these are so scattered through the city that some one field for recreation is within the reach of every child. What wonderful playgrounds they are, and how completely they are provided with means of amusement! There are swimming and wading pools,

ONE OF THE MANY PLAYGROUNDS

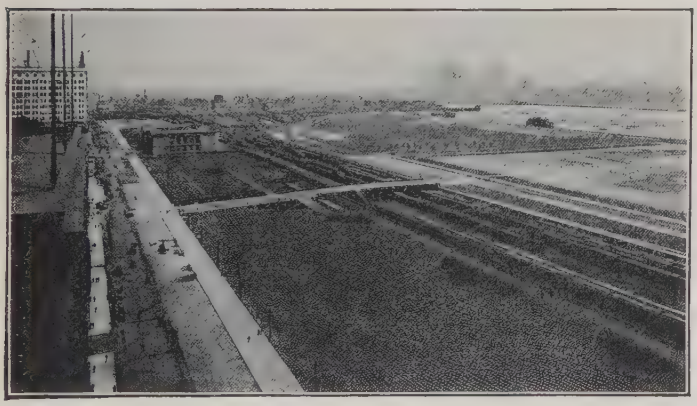
A wading pool, and a house for indoor recreations are unusual features. Other parts of the playground provide space for all sorts of athletic sports.

shower baths, assembly halls, clubrooms, gymnasiums, reading-rooms, lunch counters, ball and tennis fields, as well as sand-piles, swings, slides, and other things to tempt boys and girls to play and exercise. With these opportunities the children of "The Garden City" are perhaps in a fairer way to grow up healthier and happier than those of many a smaller city.

Strangers who visit Chicago during March or November often think it is rightly called "The Windy City"; but the strong west winds are a

blessing, even if in disguise, blowing the smoke of the factories away from the city, thus keeping it healthful. As for the easterly winds that blow across Lake Michigan, the Chicagoans are grateful to them for cooling the city during the hot summer days and nights that at some time or other between June and September must be the fate of all places in this continental interior.

Situated in a region of almost inexhaustible soil, blessed with a long warm growing season and abundant rainfall, you are not surprised to learn



MICHIGAN AVENUE AND THE LAKE FRONT

Note the tracks of the Illinois Central Railroad, the raised driveway over these tracks, the beach, the bath house, and the pleasure boats. At the horizon is the line of the breakwater.

that Chicago lies in one of the most productive valleys in the world, and has often been declared to be the greatest food market in the world. At this point there springs to your mind the thought

of other fertile valleys on the globe, valleys such as the Ganges and the Nile, that support a dense population. Let us see what the Mississippi Valley has to offer in comparison with these. Within a night's ride of Chicago live 40,000,000 people. This territory stretches from Minneapolis and St. Paul on the north to Nashville on the south, from Omaha on the west to Pittsburgh on the east, and it includes many large cities. The things man most needs are cereals, lumber, live stock, steel, copper, clay, fuel; all these are found in or near the Mississippi Valley, and by means of its navigable waters and level surface, transportation and travel have been made so easy that these many millions of people are able to live largely on the products of the land about them; yet all of them look to the great central market by the Lake for the distribution of these products.

The center of the wheat area of the United States is in Iowa, four hundred miles west of Chicago. As the crop moves eastward it must pass through Chicago, and the city profits by this transit. In 1838 seventy-eight bushels of wheat left Chicago for Buffalo. Seventy years later, 10,000,000 bushels were shipped. About one third of the corn crop of the country is fed to hogs, and most of these go to market by way of Chicago. The oat and hay crop are fed to live stock, and Chicago is known the world over as the greatest live-stock market and meat-packing center. In one year 9,000,000,000

SOUTH WATER STREET

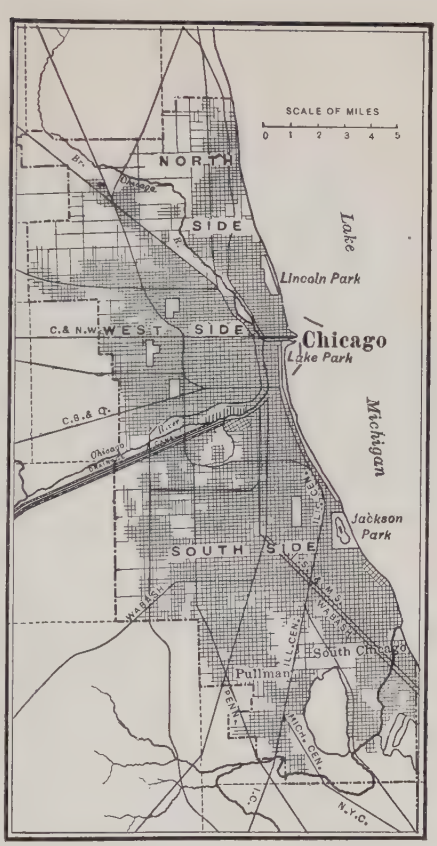
eggs were brought to Chicago; pineapples come in fourteen days from Honolulu, bananas from Central America, oranges from California and Florida, apples from Washington, Oregon, and Michigan, peaches and grapes from all parts of the country, and in the winter plums and pears from South Africa. So Chicago has become the great food distributor of a large part of the Mississippi Basin, and the South Water Street Market along the Chicago River is, as you would expect, one of the most interesting sights of the city. But you must get up early if you want to see it at its busiest.

By this time you must have begun to realize that, if all the products which feed, shelter, and

clothe the people of the Middle West are distributed through Chicago, it must itself be a great railroad terminal. It is more than this; it is the greatest transportation center in the world. Twenty-seven separate roads make a terminal of Chicago, and fifteen hundred passenger trains leave and enter daily. It is the distributing point to all points west, and the collecting point for western products to be sent east; for it lies at the southern terminus of a great east and west waterway, and at the northern terminus of an east and west land route. Lake Michigan, three hundred miles long, cuts across lines of traffic so that land routes are forced to center round the southern end of the lake. Thus routes of communication radiate from Chicago like the sticks of an open fan. Through railroads reach east to Montreal, Boston, New York, Philadelphia, Baltimore; south to Savannah, Atlanta, Mobile, New Orleans, Galveston; west to Los Angeles, San Francisco, Portland, Seattle, and Vancouver. From the port of Chicago seventeen steamship lines send vessels to all points between Duluth and Buffalo. When the harbor improvements are completed, Chicago will have one of the finest inland harbors in the world; and the people of the Middle West, who are not content with doing things in any small way, have already begun to think about a Lakes-to-the-Gulf Deep Waterway which will bring tidewater to the shores of Lake Michigan, thus centering sixteen

thousand miles of navigable waterways at the city.

Naturally a city where raw material is so easy to get will develop manufacturing. Meat packing is Chicago's greatest local industry, though others are not far behind. In the stock yards cattle and hogs are killed, meat prepared, and by-products (lard, butterine, gelatine, ammonia, soap, glycerine, candles, glue, fertilizers, and knife handles) made.



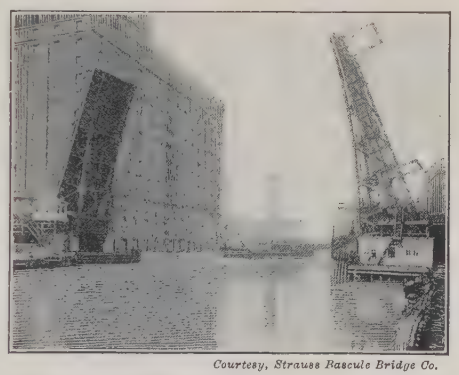
THE CITY OF CHICAGO

The principal railroads entering Chicago are: the New York Central; the Pennsylvania; the Illinois Central; the Chicago and Northwestern; the Chicago, Burlington, and Quincy; the Michigan Central; the Wabash; the Lake Shore and Michigan Southern.

The McCormick Harvesting Machine Company is the largest

concern in the world making farming implements. The iron, steel, and lumber out of which these machines are made is right at hand, and near by are the level prairies where these reaping and harvesting machines are needed. In South Chicago are immense mills where steel from Lake Superior iron ore is rolled into rails, wire, and girders. The Pullman Company makes sleeping, dining, and parlor cars; indeed, one cannot travel anywhere about the United States without using some product of the Chicago factories to speed him on his way. Chicago is one of the largest lumber markets in the world, manufacturing furniture, wagons, barrels, cars, musical instruments, etc. It has large breweries, makes railway supplies, prints books, and makes clothing. It does all these things because it can lay its hand on all kinds of raw materials brought by rail and water. The little Chicago River, which divides the city into three natural divisions, is a giant in commerce, the tonnage of its yearly trade being greater than that of the Suez Canal. Grain elevators, coal and lumber yards, grimy warehouses and factories line its banks, and it is crossed by numerous bridges. It is not a pretty river, but if you enjoy seeing life and movement you would do well to stand near one of the curious "lift" bridges and watch the ceaseless traffic passing across it or up and down the surface of the dark waters. Into this busy hive of industry come workers from the

ends of the earth, drawn here by the opportunity to earn a living. As the level prairie sets no limit to the extent of the city, one of the big problems Chicago is trying to solve is, how to get these workers from home to shop and back again.



Courtesy, Strauss Bascule Bridge Co.

A "JACK-KNIFE" BRIDGE ACROSS THE CHICAGO RIVER

This bridge is lifted to allow a boat to pass through. Traffic on the street must wait until the bridge is lowered. Note the closed bridge in the distance.

In one way Chicago is unlike any other big city of the world; it has no ancient history. Its birthday as a city is March 4, 1837, an infant among the cities. Peking was built by Kublai Khan, Emperor of China, in 1267 A.D., Rome was founded 750 B.C., and London was already a place of some importance when the Romans invaded England in 61 A.D., yet Chicago is larger than all of these except London. It can truly be said to be "The Wonder of the Age," perhaps the most expressive of all its nicknames. Not yet one hundred years old, it is now the second city of the United States and stands fourth in population among the cities of the world. It rose as if by magic from the mud of a prairie

creek. In 1830 a gentleman said, "We crossed the Chicago River by means of a grapevine cable stretched across it." In 1848 the streets were country roads, and a mud hole deeper than usual was marked by a signboard, "No bottom, the shortest road to China." An old hat resting on the surface of the mud, where its owner had last been seen, with the placard "Man Lost," was a familiar warning where not to go. In 1823 Chicago had seventy-five inhabitants; in 1910, 2,185,283. In

Courtesy, Chicago Historical Society.

CHICAGO IN 1831

From a contemporary sketch made by the wife of one of the earliest settlers.

1836 its exports were valued at $1000; in 1911, they were worth over $7,000,000. In 1836 its imports were valued at $325,000; in 1907, at over $30,000,000. These facts are astonishing, they are true of no other city in the world, yet there are many people who believe that another century will show an equally remarkable growth. At the

MICHIGAN AVENUE AND GRANT PARK
This beautiful street follows the shore of Lake Michigan.

time Chicago received its charter, there were only three States west of the Mississippi, and no railroads west of Pennsylvania. When you compare this with a railroad map of the present trunk lines radiating from Chicago, you cease to wonder at the number of steel mills and railway supply shops that are to be found all over the Middle West.

Chicago was the first city to elect a woman as its Superintendent of Schools. You gather from this that the people of the city are not afraid to undertake things that have never been done before. They have built a Drainage Canal from Lake Michigan to the Mississippi River, costing $35,000,000, which carries the sewage away from Lake

Michigan, the source of the city's water supply. This canal may in the future be used for transportation as well. Chicago has the largest department store in the world; its employees, numbering 9000, would make a good-sized town; so you see it is the shopping center of the Middle West as well as its market.

Of the people that make up this teeming city there are English, Irish, Greeks, Syrians, Germans, Dutch, Russians, Poles, Italians, Swiss, French, Chinese, Scandinavians, Bohemians, and colored people. For these people daily newspapers are published in many languages, and at Hull House men and women, boys and girls, of every race and creed and color, meet together to play, to dance, or to study, and to learn that they are "brothers and sisters all" under our American flag.

LAKE SHORE DRIVE
One of the many boulevards.

Mr. James J. Hill, the builder of the Great Northern Railroad, says: "When the Pacific Coast States shall have a population of 20,000,000, as they will, then Chicago will be the largest city in the world." Its citizens, looking ahead to this day,

are now planning to make it one of the most beautiful, healthful, and delightful cities of our land. Paris has been made the most beautiful city of Europe by the wisdom and genius of its people. Chicago is working toward this ideal.

QUESTIONS FOR STUDY

1. On the map of the United States in your geography textbook measure the distance from Chicago to Omaha. Lay off this distance on a slip of paper. Using this distance as a radius, draw a circle on the map with Chicago as the center. If you have a pencil compass, this will be easy; if not, use pencil and a string the proper length. How many large cities do you find on the map included in this circle? Name them.
2. Draw this circle in color on an outline map of the United States. Print names of States included, and names of chief cities. Give this exercise an appropriate title.
3. Why could the area within this circle be rightly called the hinterland of Chicago?
4. What lake and what river does the Chicago Drainage Canal connect? This canal makes Chicago belong to what two river systems?
5. Name and locate the canals in the vicinity of the Great Lakes. Tell what bodies of water each connects and the importance of each.
6. What difficulties does so winding a river as the Mississippi present to the making of a Lakes-to-the-Gulf Deep Waterway? Show how important such a waterway might become after the opening of the Panama Canal.
7. Name and locate the cities between Chicago and the Gulf of Mexico which would be important points on such a waterway. Locate these cities and this waterway on an outline map of the United States.
8. What is a grain elevator? Where are they located in Chi-

cago? Explain as much in detail as you can how the storage and shipment of wheat adds to the business and population of Chicago.

9. Does the place you live in export any manufactures or raw material? What articles are brought into your home locality? Which are of greater value in the course of a year, the exports or the imports? (Make inquiries of the Board of Trade or of a leading merchant.) How was this in Chicago in 1836? In 1907? How do the exports and imports of the United States compare in value?
10. On a map of the United States measure the distance from Chicago to New York; from Chicago to New Orleans. Traveling forty-five miles an hour, how long would it take to make these journeys? Compare these distances with that between Bombay and Calcutta (overland); London and Constantinople; Denver and San Francisco.
11. Which is the longest of all the distances in Exercise 10? The shortest?
12. On a map of the United States trace the route from your home to Chicago. How long does it take to make the journey? What would you like best to see in Chicago?
13. Study the picture of the South Water Street Market. What problems of transportation does such a market present to a city? Is there a central market in the place you live in?
14. Write all the reasons you can why Chicago is the greatest food market in the world.
15. What is a by-product? How many by-products of the stock yards are mentioned in this chapter? Look in the chapter on Savannah and find out what vegetable by-products are taking the place of these animal products.
16. Why should the largest furniture factories be located in the Middle West? The largest factories for making harvesting machines? The largest stock yards?
17. What foreign countries probably use the McCormick harvesting machines? Write a letter of inquiry about this

to the McCormick Harvesting Machine Company in Chicago. Do you think India uses these machines? Russia? Spain?

18. Where does Chicago get the iron for her steel? The coke? Why should there be a big demand for steel rails, steel girders, and bridge work in the Middle West? Examine the picture of the open bridge across the Chicago River. Tell how this river serves the city.
19. At what points do you imagine the Mississippi is bridged? Why?
20. What foreign countries supply workers for Chicago's factories and mills? Point out each of these countries on the map. From what ports of Europe is it probable that these emigrants sailed?
21. Is there any foreign population in your home locality? If so, find out what these people are doing for your town. How do our public schools help to make American citizens out of these foreigners?
22. Use your history textbook and find out which were the three States west of the Mississippi when Chicago received its charter. How many States now west of the Mississippi? Name and point to them on the map.
23. How much did it cost Chicago to get pure drinking water? Where does the water you drink come from?
24. The stock yards employ about 6000 workers, and the Marshall Field Department Store about 9000. How do these figures compare with the population of your home town or city?

EXERCISES FOR WORLD REVIEW

1. Name the four largest cities of the world. Write a paragraph about each, comparing them as to age, size, location, people, importance, points of interest.
2. Name and locate two lake cities in Europe, one in Asia, and one in Africa. Try to find out which of these are on lines of railroad. Tell how such a location adds to the beauty and pleasure of city life.

PITTSBURGH, THE WORLD'S WORKSHOP

UNLIKE most cities of the United States Pittsburgh — the burgh or city of Pitt — began as a fort. This fort guarded a gateway to which there were two main avenues of approach, one from the north, the other from the south. Once inside the gate, the two roads melted into one broad highway which led westward to a vast country, where riches lay hidden in the rocks and soil, where numberless rivers invited to easy travel, and where the climate made for a pleasant life. We do not wonder that ambitious nations quarreled over the possession of this gate, for whoever held it controlled a highway of a thousand miles leading to the Gulf of Mexico and the Atlantic. Can you name the highroad and the two smaller waterways whose junction forms the "Point" on which the fort was built? What flags have waved over this debatable ground, and when was the warlike name of *fort* changed to the peaceful *burgh*, or *city?* Little is left in Pittsburgh to-day to remind us of the bloody struggle of colonial times. At the tip of the Point, in the center of a tiny green square, is a small six-sided blockhouse built in 1764 to protect the early settlers from the hostile Indians. It stands, with its stout oak timbers and massive

stone foundation, a little shrine of patriotism in the heart of a workaday world, almost as hard to find as a needle in a haystack, it is so surrounded by freight yards and warehouses.

In the years that immediately followed the close of the Revolution, multitudes came from the East to the "Gateway of the West," but few settled there; they were either bound for the "Land of Promise" that lay farther west, or they were traders with an eye on New Orleans and its sugar, cotton, and molasses, for which there was in the North an ever-increasing demand. The coal and iron that was to make Pittsburgh the "Workshop of the World" lay practically untouched in the hills which surround the city, so the chief importance of the little settlement was as a break in transportation. Those who came by the Allegheny or the Monongahela River had to change their cargoes to heavier barges or scows before shipping through the gate on the broad Ohio, and the emigrants, who had pushed their way over the mountains along rough roads on horseback or in wagons, found it convenient to rest here before embarking on the

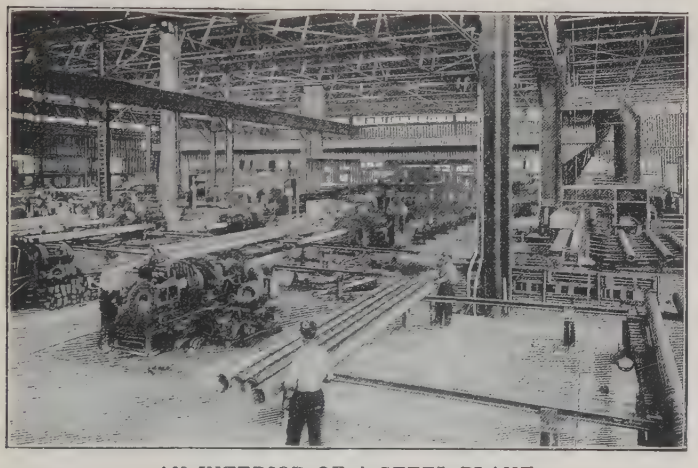
THE BLOCK HOUSE ON "THE POINT"

easier stretch of their journey. Sometimes the rush of travel was so great that they must wait for boats to be built to take them down the river; in the mean time they laid in provisions and other necessaries for the journey. Gradually the settlement became a trading center, the principal depot of supplies on the great highway from East to West. This was the second stage of Pittsburgh, and the reason for the growth of the trade center was the same as that which led to the building of the fort. "I think it extremely well situated for a fort, as it has absolute command of both rivers," said Washington in 1753, and time has proved that the judgment of the young surveyor was correct. Here the Allegheny River with its tributaries, draining the northwestern slope of the Alleghany plateau, unites with the Monongahela from the southwestern slope,

PITTSBURGH AND THE NEIGHBORING TOWNS

The principal railroads entering Pittsburgh are: the Pennsylvania; the Pittsburgh and Lake Erie; the Pittsburgh, Cincinnati, Chicago, and St. Louis; the Baltimore and Ohio; the Wabash.

The Indian trails that followed the river valleys and the colonial roads that zigzagged over the Appalachian Mountains met here, and in the crotch



AN INTERIOR OF A STEEL PLANT

of the Y formed by the rivers, the fort was built, the trading center grew, and here to-day throbs the heart of the busy manufacturing center which forms the Greater Pittsburgh of to-day.

If you will look in your geography textbook for a map of the world showing the density of population, you will see that the most thickly peopled areas are in fertile valleys, where the climate is good and routes of travel are easy. Some of the oldest civilizations once lived and still flourish in these valleys. This is because in such localities the three necessities of life — food, shelter, clothing — are easily obtained. But though the Ohio

and its tributaries have these requisites for attracting and supporting a large population, Pittsburgh has something more, else it would never have outgrown in importance the "little Pittsburghs" which are scattered along the converging valleys. Pittsburgh is the "capital of the iron world" because it possesses inexhaustible resources and

PITTSBURGH, SHOWING "THE POINT"

Study this view and the one opposite in connection with the map on page 120.

remarkable transportation facilities. Mr. Andrew Carnegie has said that it is the best distributing center in the United States. It is these advantages of location which make it possible for Pittsburgh not only to lay its hand on varied raw materials, but to send its manufactured products all over the world, so that one may rightly say the world is the market of the city.

In the first place, all the railroads run down the streams, and all the streams finally meet in the Ohio. This is a great advantage when you remember that the country around Pittsburgh is furrowed by deep steep-sided valleys, across which railroads can be built and run only at great expense. In the hills which flank these valleys are enormous veins

PITTSBURGH, THE SECTION INCLUDING "THE HUMP"
"The Hump" is shown in the distance, at the extreme right.

of bituminous coal which is easily mined. In many of the valleys is the limestone so necessary in the making of iron; and up the Monongahela lies a deposit of coking coal, which is made into coke at Connellsville and used in the manufacture of steel. Iron is also found in the rocks of western Pennsylvania. Pittsburgh, therefore, had to be an iron center, though its supply of ore no longer comes

from Pennsylvania, for its nearness to the Great Lakes and the ease and quickness of transportation on these waters make it possible to bring ore from the Lake Superior iron mines more easily and cheaply than it can be dug from the mines in the home locality. During the navigation season a continuous stream of ore slides down our great inland waterway to the roaring blast furnaces of the "Smoky City." At Conneaut and Ashtabula it leaves the ore boats and is transferred by machinery to cars, which are hauled rapidly down and across the Allegheny Valley to Homestead, Braddock, Duquesne, and the smelters and factories of the "Little Pittsburghs" along the way. From this great distributing center the finished product radiates north, south, east, and west. The "Gateway of the West" has become the "Workshop of the World"; for this is the Age of Steel. Our big cities must be built of fireproof material, so Pittsburgh makes steel beams and girders, and bolts to rivet them together. Steel rails and locomotives from Pittsburgh are used in Japan and China, and steel dining-cars, provided with air-brakes and window-glass, made in Pittsburgh, carry passengers over steel bridges made in the "Iron City." Pipes for the new aqueducts of New York and Los Angeles are being made in Pittsburgh, and massive castings for Panama, pier work for the Great Lakes, as well as miles of telegraph wire and myriads of lamp chimneys and bottles form

part of the freight that leaves the city daily. Pittsburgh armor plate encases our battleships, and not far from the city are the Westinghouse Companies that supply the world with electrical apparatus, switches, and signals. These industries are controlled by men of energy and forethought, who do their planning in the superb towering office buildings on that "Point" which a hundred and twenty-five years ago was described as follows: "Pittsburgh is inhabited by Scots and Irish who live in paltry log houses. The place, I believe, will never be very considerable."

But the tale of what Nature has done for Pittsburgh is not yet all told. Perhaps you have thought it curious that so brittle a substance as glass should be made in the "Iron City." There are two geographical reasons for this. In the valleys of western Pennsylvania and West Virginia lie beds of sand suitable for making glass. The presence of this sand so near to cheap fuel led to much experimenting in glass-making early in the history of the city. After repeated failures, General O'Hara, one of the founders of the first glass factory, made the statement, "To-day we made the first bottle at a cost of $30,000." About twenty-five years ago it was found that the supply of natural gas which had been used for lighting the city was abundant enough to use for manufacturing purposes. Since then glass-making has "boomed," until Pittsburgh leads the world in the production of plate glass,

makes 70,000 tons of pressed glass, and so many lamp chimneys that the product of one year if placed end to end would reach halfway around the globe. Strange to say, the city that turns out the heavy steel bridges that bear us safely over deep waters makes another product that floats us on the surface of these waters. The largest cork factory in the world is located here, one firm in Pittsburgh owning large cork-oak forests in Spain and Portugal, and making corks, life-preservers, mats, soles, and floor coverings.

Many factories use a third fuel that is found in the apparently inexhaustible rocks of the Alleghany plateau, namely, oil. This like the gas is piped from the wells to the factory. Naturally Pittsburgh makes all kinds of apparatus for drilling oil and gas wells, finding a demand for this machinery in every oil and gas field in the United States, and in every foreign country where oil has been discovered.

The weight of all the freight that passes in and out of a city is called its "tonnage"; that of Pittsburgh, however, is not made up entirely of the raw material passing into the city and the manufactured articles passing out. There is another item of export, which added to all the rest makes the tonnage of Pittsburgh three times as great as that of New York and Chicago, twice that of London, and four times that of Paris. This item is coal. Flatboats and barges, each holding from 12,000 to 14,000

A FLEET OF COAL BARGES ON THE MONONGAHELA RIVER
Note the height of the plateau into which the river has cut its valley.

bushels, are built into a compact mass and pushed by staunch steamers down the Ohio and Mississippi to New Orleans and to towns along the South. One such steamer has taken a load of coal down the Ohio which could not have been put on a train eleven miles long. When the river is low the coal traffic is tied up waiting for "barge water"; but after spring freshets or heavy rains an endless procession of coal flotillas steams down the river, and it is possible when this traffic is at its busiest to cross the river by stepping from barge to barge. It is Pittsburgh coal that runs the cotton gins and presses of Tennessee and the sugar mills and refineries of Louisiana, that roasts the coffee in New Orleans, and goes as ballast to the fruit ports of Central America. The following

clipping from the New York *Times* shows how important this coal traffic is to the country at large.

BIGGEST COAL SHIPMENT

8,000,000 Bushels on Way Down River from Pittsburgh District

PITTSBURGH, Aug. 30. — The largest coal shipment in the history of the Pittsburgh District and the Ohio River is under way bound for Cincinnati, Louisville, and New Orleans. The shipment aggregates 8,000,000 bushels.

On account of recent excessive rains the rivers are rising rapidly at all points. At a number of places a small flood stage is anticipated within a short time.

Upward of 1500 rivermen are employed in order to get the big fleets away, while several thousand coal miners, employed by river coal companies are assured steady work for many months to come.

Pittsburgh has one of the most picturesque city sites in the world. This can be best appreciated by ascending the heights of Mount Washington across the Monongahela. Cable cars, one of the novel "sights" of the city, will pull you up the steep incline, where from its brow you will look down on a scene of absorbing interest. This is

what a recent writer has said about it: "The Point of Pittsburgh presents often an inspiring picture. At night when the winds are driving the smoke away, the great city lies in light like a beautiful battleship at anchor; two tides rush silently together at the tip of the sharp dark prow; high upon lofty buildings twinkle the lights on the 'bridge'; and far up in the blue dome on the summit of the hill glimmer the lights at the head of the mast; over it all, now and again, the fire flames from Braddock and Homestead flash out

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THE CARNEGIE TECHNICAL SCHOOLS

as though the fire boxes under a thousand boilers had been opened or a hundred broadsides had been suddenly unmasked."[1]

The hills and rivers which give the city its

[1] A. B. Hulbert, in *The Ohio River*.

beauty present great obstacles, which have not all been conquered as yet. Into the small triangular area known as the "Point" is crowded the business of a big manufacturing center. Trolley lines, railroads, and bridges converge here, for back of the "Point" rises the "Hump," and beyond are more hills given over to residences, parks, churches, the splendid Carnegie Museum, Library, and Technical Schools, the University and numerous playgrounds.

When we say "Pittsburgh," we mean the Pittsburgh district, for we cannot separate from the city the busy workshops along the rivers, all of which depend upon the city at the river forks. Mills and blast furnaces lie on both sides of the Monongahela, making a continuous line of steel towns, — Homestead, Braddock, Duquesne, and others, — all turning out one or more of the products you have read about in this chapter. These are not pretty towns; the hills rise abruptly three hundred feet above the river, making a poor foothold for the homes of those who must live near their work. Smoke hangs over the valley, and dust from the soft coal and the bare hillsides sifts over trees and houses, over ugly yards and streets. But this will not always be so. Pittsburgh itself is not the "Smoky City" it used to be, and already there are some bright, pretty spots in the other factory towns. We shall learn by and by to get rid of the smoke, to clean the streets, to plant trees, to build

prettier houses, and to insist on more healthful surroundings for those who work in mill and shop.

QUESTIONS FOR STUDY

1. Tell the story of the struggle for the possession of the Gateway of the West. Look up additional facts in your history textbook, and as you tell the story bring out the geographical reasons for the importance of this Gateway.
2. Hunt on your maps for the ending *burgh* or *burg*. What does it mean? What is a burgher? A burgomaster? In what country is Edinburgh?
3. Describe the three stages of Pittsburgh's growth; as a fort, a trading center, a manufacturing city. Tell how it grew from one to the other. Write this for your weekly composition and illustrate it by drawing a picture of the old block-house or by a map showing the location of the city.
4. Draw a sketch map or plan showing the location of Pittsburgh and the "little Pittsburghs." Print names of rivers and towns neatly.
5. On map drawn in Exercise 4, place the meridian of Pittsburgh. What other city of the United States is on the same meridian? In what direction from Pittsburgh is Panama? When it is noon at Pittsburgh, what time will it be at Panama? At Charleston? At all places on that meridian?
6. On an outline map of the United States, draw the route of iron ore from the mines in Minnesota to the blast furnaces at Braddock. Print the names of the lakes and the States bordering each; also the chief shipping ports.
7. On the map used in Exercise 6, draw the route of the coal barges from Pittsburgh to New Orleans. Print neatly the names of the cities where coal is distributed. Print also the name of each State passed on this route.

8. Make a list of the things manufactured in Pittsburgh; add to the list given in this chapter if possible.
9. Give all the nicknames of Pittsburgh. Explain each.
10. Examine the views of the city on pages 122 and 123. Why are the buildings so tall and so crowded together in the business section? In what other city are the conditions similar?
11. During what months is the coal traffic on the Ohio likely to be very active? In what season must the iron mines in the Mesaba ranges shut down? When is all traffic on the Great Lakes suspended? What industries can you name that are dependent on change of season? Is there any industry in your home locality thus dependent?
12. Is there any association in the place where you live for making the place more beautiful? What is being done? What can school-children do toward this end?
13. On an outline map of North America draw the route of oil machinery from Pittsburgh to the oil fields of southern California. Do you think it likely it will go by the Tehuantepec route or overland? What port in southern California is the nearest to the oil fields of California?
14. What nationalities labor in this "Workshop of the World"? If they are to become good Americans, how must they be taught to live? Is there any foreign population in the place where you live? If so, what nationalities are there? Why are they there?

EXERCISES FOR WORLD REVIEW

1. Compare the location of Pittsburgh with that of Birmingham and Sheffield in England, Glasgow in Scotland, Essen in Germany, and Philadelphia. Why have all these cities developed iron and steel manufactures? Which city is farthest from supplies of iron ore?
2. Why is Birmingham, Alabama, called "The Pittsburgh of the South"?

3. Consult the "Rules governing the Location of Cities" (Appendix, page 203) and learn those which apply best to the development of Pittsburgh.
4. Find a fertile valley in each continent which is densely populated. Name a city in each of these valleys. Arrange your results in the following manner: —

Some Densely Populated Valleys of the World

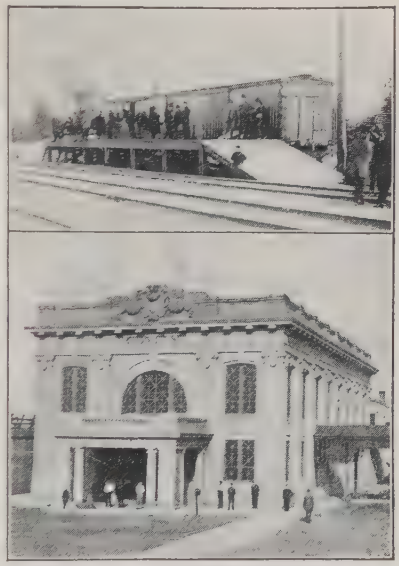
Valley	City	Country
Ganges	Delhi	India

GARY

WE live in an age when it takes a great deal to astonish us. We see a desert made to bloom like a garden, we travel from place to place in tubes under the ground, and we fasten wings unconcernedly on our backs and fly over land and sea. In spite of all this, the story of Gary will astonish even you, growing up in this wonder-working century; the more so, if you will look back along the vanishing ages at the brief record of a famous town which grew the way most towns and cities in the past have grown, without much forethought, through sad mistakes, by repeated destructions and rebuildings. As we of to-day, in city-building as well as in other ways, are profiting by the mistakes of the past, this brief glimpse into the history of an old city will help you better to appreciate the marvels of the new.

Many hundred years ago some Roman soldiers built a fort on a river-bank at a place where the stream could be easily crossed. They built a wall around it and threw a bridge across the river, and stayed there four hundred years. The fort grew into a walled town of importance, a market-place and some temples were erected; then the Romans left the city, and it fell into the hands of foreign peoples, first one, then another. Two hundred

years pass. The walled town has become a trading center, slaves are bought and sold in its market, a mint supplies the people with coin for trading, and there are churches for them to pray in. Houses are of wood with roofs of straw, and they are huddled together for protection. After several hundred years the town is besieged, and the conquerors put up a mighty fortress with a great square tower to show how strong they are. Streets are narrow and crooked; they are little used except as places for refuse, waste from the houses being poured into them. The river is the highway, the watermen are the cabmen. Water for household use is brought round by water bearers to the doors. Three hundred years pass. Many times during these centuries parts of the town are burned, and there are dreadful plagues because the place is so dirty and ill-smelling. The city government

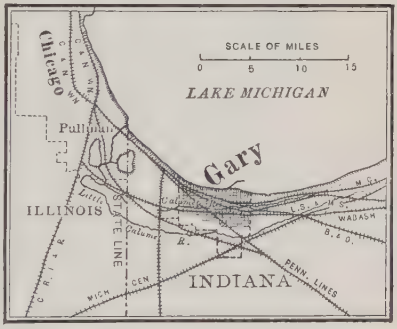


Courtesy, The Survey, New York.

GARY'S FIRST RAILROAD STATION
THE NEW UNION STATION

issues an order that no more houses can be built with thatched roofs, and the magistrates obtain the right to bring good water into the city in leaden pipes. Streets are still unpaved and in rainy weather are almost impassable. Again there is a lapse of several hundred years and then an act is passed providing for the city to be sewered. One hundred years pass. The king orders the streets around the market to be paved, and citizens are required to hang lighted candles out of their houses on dark nights. Sixty years pass. A water company is organized to bring water from a distance and to build a reservoir, and public lights are put up in the streets. A hundred years go by. The Roman wall by this time has disappeared, and neighboring towns have become part of the expanding city. Streets are paved and sewered and lighted by gas. Another hundred years pass, bringing the story to the present century. In this slow way the old city of London has grown into the London of the present, the largest city in the world. Many bridges carry people across the river, but old London Bridge is the most traveled of them all. There are palaces and art galleries, brilliantly lighted streets and extensive parks. Amid all this modern life a much-treasured fragment of the Roman wall remains to tell of the city's ancient origin and of its many destructions, but there is no record of what it has cost in human lives to teach men how to live in cities.

The story of Gary is not like this. Gary did not grow, it sprang full-fledged into existence. One day in the year 1906, a magician went to a waste and dreary place where sand lay in shifting heaps and sluggish streams crept through marshes to the lake, and waving his wand over the sand and the marsh and the scrub-oak, said, "We will build a city — here!" And behold, in three years 15,000 people were living in nice little homes, on broad paved streets, provided with electric lights, pure water, good schools, and many other things which go to make up city life nowadays.



GARY AND ITS SURROUNDINGS

The principal railroads entering Gary are: the Baltimore and Ohio, the Lake Shore and Michigan Southern, the Michigan Central, the Pennsylvania, the Wabash.

But who was the magician and what sort of town did he build? Why did he choose so unlikely a spot and think anyone would want to live there? Are there not cities enough already on our central prairies? These questions, which you are quite ready to ask, you can answer yourselves before long, perhaps before you reach the end of this chapter.

In your study of Pittsburgh you learned something of the great demand there is in all modern

countries for iron and steel products. Though the steel mills of Pittsburgh, as well as those in Bethlehem, Birmingham, and Chicago, often work night and day, it became evident some years ago that the growing needs of the future could be met only by creating a new steel center. Where should it be located and who should build it? Not one man alone. The day has gone by when one man can build a great industrial plant such as this would have to be, and run it himself. The mills and factories that supply the world with foodstuffs, clothing, and building materials are built and carried on by many men, united into business organizations in order to manufacture on a larger scale and more efficiently than was done a hundred years ago. It was such a body of men, called the United States Steel Corporation, that undertook to create not only the most perfect steel plant in the world, but at the same time to provide homes for those connected with the industry, and to do this in a way and on a scale unparalleled in history.

They chose for their purpose a tract of waste land in Indiana on Lake Michigan, twenty-five miles southeast of Chicago. It had great advantages so far as location was concerned. It was nearer than Pittsburgh to the Lake Superior iron ores, and the railroads which hugged the shore of the lake ran conveniently near the limestone of Michigan and Virginia, the coke of the Alleghanies, and the coal of Illinois. From this center of

transportation facilities, the manufactured steel product could be shipped in all directions; moreover, there was plenty of room for growth, and the plans of this corporation looked forward to a great future.

After the spot was selected, the magician's work began. There was no possible harbor where ore boats could land, much less turn around and go back, only a long straight beach backed by sand dunes which the winds chased this way and that. But this was no obstacle; the magician merely waved his wand, and a harbor was made. Out of the waters of Lake Michigan there grew up a long sea wall to break the force of the winds for which the lake is famous; a ship canal was extended into the land and made to end in a turning basin where half a dozen 12,000-ton ore boats can turn easily around; the Calumet River, which ran its sluggish course parallel to the lake, was lifted up and put into a new channel dug for it; and as if all this were not enough to show that a wizard was at work, three railroads which lay in the way of the proposed mills were taken up bodily and laid down again back from the lake front. While this was going on, steam shovels were leveling the hills and filling up hollows, and surveyors were laying out streets. Then a tunnel was dug far out under the lake for a supply of pure water; conduits for gas and electric lights were laid alongside sewers and water mains; streets were paved; an old trail in the

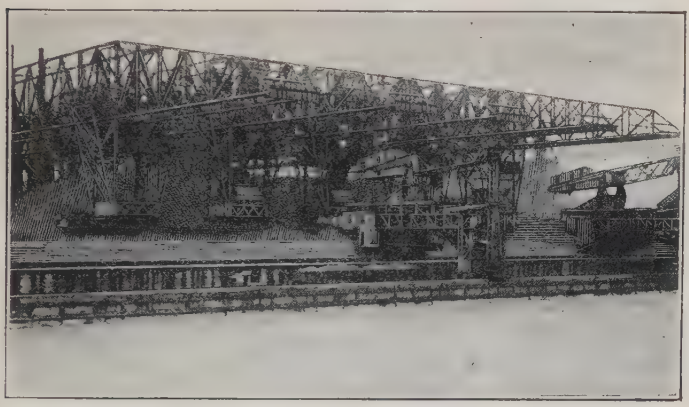
woods became Broadway, one hundred feet wide and four miles long; trees were transplanted and parks set aside; schools, hotels, homes, shops,

THE BLAST FURNACES
The canal leads from Lake Michigan into the turning basin.

banks, and churches were built; the town was christened after the chief of all the magicians — and Gary was born.

It is no wonder that visitors come from all parts of the world to view this "Wonder City" of the twentieth century; yet, though the clean, pretty town, with its sunny skies, so different from most steel towns, wins its share of admiration, it is in the construction of the steel works that the highest skill and power have been shown. It may seem strange to you to learn that while millions were spent on achieving these wonderful results, the keynote of all the work done has been *economy* —

to do everything the best way from the start, to let nothing go to waste. Engineers have known for a long time that the gas and smoke that pour

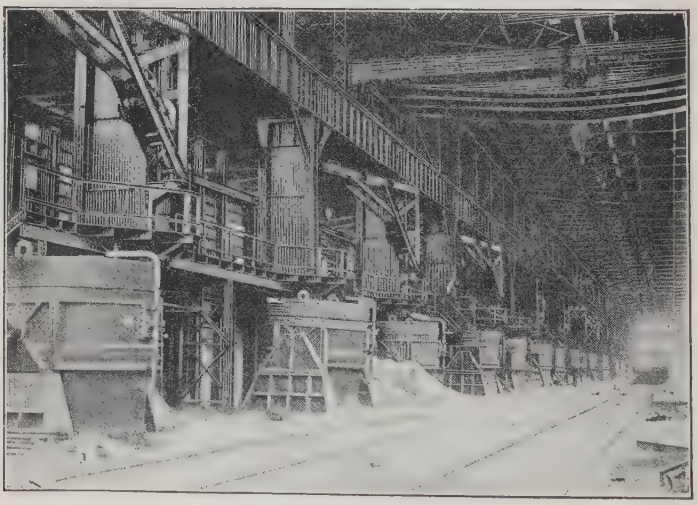


THE ORE DOCKS

Note the machinery for unloading the ore from the boats.

from the chimneys of most factories represent so much power going to waste, for gas can be made to give out both light and heat, and smoke consists of tiny particles of coal that has been imperfectly burned. In the process of smelting iron ore, that is, changing it to iron, the gases that are formed in the blast furnaces are generally allowed to escape with the smoke at the top of the furnace. Perhaps you have sometimes seen the splendid fireworks which these furnaces display at night, and wished that there were more of them. The builders of the Gary mills planned to introduce a new feature; they would use all these valuable by-

products; in this way their mills would be run more economically, and they would get rid of the smoke. So by the side of the blast furnaces they installed machinery for cleaning the gas and leading it to a power house where it operates blowing engines, which in turn provide practically all the electrical



OPEN HEARTH FURNACES
Where pig iron is converted into steel.

power required for running the machinery of the mills. No one can realize what this tremendous power means who has not stood in a rolling mill and watched the ponderous machines moving swiftly back and forth, rolling and stretching the glowing steel ingot into rails as easily as you would mold a lump of clay.

It seems as if these machines were possessed of

human intelligence, — just the touch of a lever here, the pulling of a crank there, and the work is done. It is just the same in every department of this industrial beehive. Down at the lake front what seems like a Herculean task is performed with speed and precision. A great ore boat from Duluth has just swung into the quiet reach behind the breakwater and is making for the canal. It will move alongside a huge concrete basin where ore is stacked. As soon as it is made fast, big steel buckets will grab the ore from the ship's hold and deliver it to cars, from which it will be fed to the furnaces or dropped on to the stack pile. When the boat has been emptied, it will swing round in the turning basin and steam back to the long piers at Duluth, passing on its way many of its sister boats making for the waiting furnaces it has just left.

Courtesy, The Survey, New York.

ONE OF THE SPLENDID GRAMMAR SCHOOLS IN GARY

To the right of the canal lies the deep pit in which are the coke ovens. The wise men who thought out all these details wanted to have these steel works complete in themselves; so coke is

made on the spot instead of being brought from western Pennsylvania. The gas driven out of the bituminous coal by the baking process which changes it to coke is used not only to heat the ovens, but also to run the engines for the electric lighting plant of the town. How wonderfully every detail has been planned for and executed! It would require many visits to such a plant as this to inspect its many industries.

Naturally many manufactures allied to steel-making have come to Gary to share in the advantages of its location and development. There is a company for making locomotives, one for making car couplers, a tin plate company, the American Bridge Company, and near by the largest cement works in the country. There seems to be no end to the industries that may develop in this favored spot. Of course, the opportunity for varied kinds of work draws workers from many countries; their needs must all be provided for in the town and suburbs of Gary, and their children will be taught in the Gary schools to become possibly more skilled than their fathers.

Will you dare to look ahead and prophesy that Gary will still be on the map when it is as old as London now is? Will the iron mines in the Northwest continue to yield as long as this? What will become of Gary when the iron has all been made into steel? No one knows. By that time this story will have become ancient history; but even so,

the wonder of its accomplishment will remain as marvelous as ever.

QUESTIONS FOR STUDY

1. Give the reasons for the choice of Gary's location.
2. What difficulties were encountered in establishing the city? How were they met?
3. What three substances are put into a blast furnace to produce pig iron? What is ore? Where are the blast furnaces in Gary located? Examine the picture on page 140 and describe their appearance.
4. What substances in bituminous coal are driven off by heat when coke is made? What use is made of these by-products? What is coke? (Refer to the dictionary for your answer.)
5. How many miles is it from Duluth to Gary? What lakes, straits, and canals does a vessel pass through in making the journey? Draw this route on map used in Exercise 3.
6. Which is longer, Lake Superior or Lake Michigan? Which is the largest of the Great Lakes? Tell by examining the map which is highest above sea-level. How do the ore boats get through the falls in the St. Mary's River?
7. How does the age of the oldest city in the United States compare with that of London?
8. Have you a bridge in your home locality? Of what is it made? If of steel, try to find out where the girders and other parts were made. Where do you think the steel for the buildings and machinery at Gary was made?
9. What is the nearest steel-making center to your home?
10. How many railroads pass through your home locality? If it is not a railroad center, locate the one nearest you.
11. Draw a plan of Gary, showing the residence town, the steel works, and other industries.
12. Write to *The Gary Times*, Gary, Indiana, enclosing four

cents, and ask them for the latest issue of their paper. Bring to the class some bits of information that you think will interest them. Some newspapers publish a special annual number which costs a little more; perhaps *The Gary Times* does.

13. Have you discovered who the Magician was? Of what was his wand made?

SAVANNAH, THE FOREST CITY

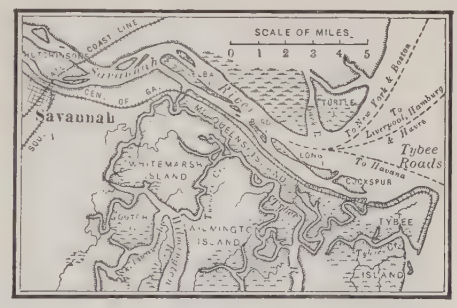
SAVANNAH in the Southeast, Portland in the Northwest, both seaports, yet how different the two cities are, and how unlike are their surroundings! One faces the broad Pacific, sending across its waters flour for food and wood for shelter; the other on the narrower Atlantic feeds the looms of the Old World with cotton fiber, and supplies the greater part of the world's demand for rosin and turpentine. Portland glories in its mountains and its forests of giant firs and spruces; Savannah lies in the midst of a low coastal plain, across which muddy rivers move slowly seaward, their banks bordered by live-oaks, palmettoes, and the long-leafed pine. Portland is a new city; Savannah has her monuments to General Oglethorpe and General Greene, Count Pulaski and Sergeant Jasper, and the record of having been besieged more times than any other city in the United States. Savannah is the largest port on the South Atlantic, and ranks next to Galveston and New Orleans in the export of cotton.

A study of the map will show you why Savannah has gained preëminence as a port. Along the Atlantic Coast from Norfolk to Cape Sable you notice few large seaports; Wilmington, Charleston, Savannah, Jacksonville complete the list, and not one

of them has as yet reached the one hundred thousand mark in population. There are several reasons for this, not all of them geographical; but you can understand from their location why none of them is a great bustling city like Boston, New York, or Philadelphia. They are cut off by the steep grades of the Appalachian Mountains from the great east and west movements of trade and travel, therefore they serve a smaller hinterland. Look carefully again at the map and you will see that the mountains in Georgia and Alabama are much lower than those in North Carolina and Virginia, and that the Tennessee River makes a broad water gap across them. Because of this convenient river valley and low mountain passes near by, railroads have been built through the southern Appalachians connecting the Atlantic seaboard with the Middle West. Here stand the two "gate" cities, Chattanooga and Atlanta, one on the Tennessee River, the other at a point where roads crossing the mountains radiate south, east, and west. Charleston and Savannah, being nearer these mountain gateways, have opportunities of trade with the cities of the Mississippi Valley. Savannah has the added advantage of direct communication by rail with Macon, Montgomery, Jackson, and Shreveport, making it possible to send to Savannah for export cotton from Oklahoma, Arkansas, Mississippi, and Alabama. Savannah has thus extended its hinterland more than Charles-

ton ; it is on a tidal river navigable to Augusta, two hundred and fifty miles distant, and is a greater railroad center, gathering and distributing more readily.

The fortunate location of the " Forest City" and much of its beauty are due to the foresight of General Oglethorpe, its founder. The coast-line of the tract of land granted to the colony of Georgia was a network of sea-islands, tidal rivers, sounds, and marshes. Where amid these rather unfavorable surroundings should the first settlement in the infant colony be planted? It must first of all be easy of access to the mother country to whom it must look for assistance in its early years, and within touch of Charleston and Beaufort, its neighbors in South Carolina; so the town must be on the sea or on one of the rivers offering anchorage for ships. Still more, it must be away from the dampness and fevers of the coastal lowlands, and so situated as to reach easily the fertile inland country where offshoots from the parent town



SAVANNAH AND VICINITY

The principal railroads entering Savannah are: the Atlantic Coast Line, the Central of Georgia, the Southern, and the Seaboard Air Line Railway.

would surely spring up. General Oglethorpe, therefore, and his friend William Bull, an engineer from South Carolina, had much to bear in mind as they cruised along the Georgian coast searching for a site for the new town. At last they found the conditions they wanted, on a bluff forty feet above the Savannah River and eighteen miles from its mouth. Here Oglethorpe made a treaty with Tomo-chi-chi, chief of a peaceful tribe of Indians living on this little plateau, and here he brought the waiting colonists, naming the place Savannah because of the level grassy meadows along the river.

Though Oglethorpe was a soldier, and therefore used to the stern realities of life, he must have loved trees and flowers, for when he laid out the town he provided for large open squares at regular intervals; and early in the history of the colony were planted here the forest trees that the busy axe of the homemaker was rapidly clearing away. If the forest came close about the city in its infancy, it seems to be in it to-day. These lovely parks, twenty-two in number, are the pride of Savannah and make it unique among our cities. Originally used as market-places or as camping-grounds in case of attack by Indians, they now serve as breathing-places and playgrounds in a city very closely built up. Few houses in Savannah have gardens around them, but from the frequency of the open squares one

hardly misses their absence, and thinks of Savannah as literally a forest city, shaded by live-oaks hung with Spanish moss, palmettoes, and flowering dogwood, the clustered tree-tops like fragrant bouquets keeping ever green the memory of the great good Oglethorpe.

You will find much to interest you in "old Savannah," especially if you know your United States history, and love to recall the self-sacrifice and valor of the noble men who served their country in peace as well as in war. Many buildings of Revolutionary days are still standing. What hearts of oak they must have to withstand the ravages of Time so well! In one of them the British general lived during the siege of Savannah in 1779; and there are beautiful churches and houses of a later date, but still old enough to add to the quaintness and charm of the "Forest City."

ONE OF SAVANNAH'S OPEN SQUARES
Showing the statue to Sergeant Jasper.

The most conspicuous feature of Savannah to those who approach by water is a white marble

building towering above the low, even sky-line of the city. The spirit of progress that dared to erect in "old Savannah" a modern sky-scraper, went still further, and made ready for the big ships that modern trade demands. Jetties were built to strengthen marshy banks, the muddy river was dredged, docks were enlarged, and railroads began to extend their terminals. The long low island in front of the city — which in Washington's day was given over to rice fields — has now become a great ocean and land terminal. Slips over four thousand feet long, where the largest freight steamers can land, give storage room for thousands of barrels of rosin and turpentine, enough it seems to supply the world for all time; yet the docks are never empty and ships continually come for more. These gum products are called "naval stores," and are obtained from the long-leafed pine, great forests of which are found in South Carolina, Georgia, Alabama, and Florida. These forests are rapidly disappearing, however, because of wasteful methods in handling the trees. Whence will come our supply of naval stores when these forests are no more? Possibly from France, already a producer of these products. Along the western coast of France south of the Gironde-Garonne River, is a district known as the *Landes*, that a hundred years ago was the poorest Department in France. To-day it is the richest. This startling transformation has been brought about by planting on the sandy

NAVAL STORES DOCKS
Note the number of vessels loading.

stretches of apparently worthless land a species of pine very rich in gum products; and because these trees are scientifically cared for, a new tree being planted as soon as an old one dies, the time may come when the once despised *Landes* may furnish a large part of the world's naval stores, and Bordeaux may become a rival of Savannah as their market.

The gathering and making of these stores is one of the chief occupations of the southern coast lands. As you cross Georgia on the railroad, you will be likely to see the curious gashes on the tree-trunks from which the resinous sap oozes; and possibly you may catch a glimpse among the trees of the "still," where the sap is boiled and separated into turpentine, rosin, and pitch. In huge tanks on the Savannah docks turpentine is stored

and drawn off into barrels as needed. This is done under State inspection, and every barrel must be measured and marked before it can be shipped. Rosin goes through a similar inspection; the head of each barrel is knocked off and a tiny cube, about the size of a chocolate caramel and looking quite as delicious, is cut out and placed on the top of the barrel. How deftly the young boy with his curiously shaped hatchet does this! Then the inspector examines it, holding it to the light to observe its color and transparency, labels it, and marks the barrel. Savannah is the largest naval stores market in the world, setting the price for naval stores wherever they are bought and sold. The United Kingdom, Germany, and Belgium are our largest customers, but ships from all over the globe come to Savannah for these useful products. This extract from the *Naval Stores Review* shows how our exports to the United Kingdom compare with those of other countries: —

TURPENTINE IMPORTS INTO THE UNITED KINGDOM

SPIRITS OF TURPENTINE

(Tons of 2240 lbs.)

From	1906	1907	1908
United States	19,960	19,593	25,184
France	1,535	989	1,291
Spain and Portugal	....	....	327
Russia and Scandinavia	4,139	4,910	1,849
All others	8	23	33
Total tons	25,642	25,515	28,687

But to Savannah and Georgia "cotton is king," as corn is to Nebraska, gold to Alaska, and sugar to Louisiana. Though cotton was first grown in Georgia in 1734, it did not become a crop of much importance until after the cotton gin was invented. Cotton was a luxury in those days because of the difficulty of separating the seed from the lint. But

COTTON READY FOR LOADING

in 1793, at Mulberry Grove, the plantation of General Greene, not far from Savannah, Eli Whitney, a young Connecticut school-teacher, perfected the little machine that could take the seed from a bale of cotton in five hours, a task that would have taken a grown man two years to accomplish! After this everybody began to raise cotton, and

Georgia soon ranked as one of the richest States in the Union. Then came the Civil War. Sherman marched from Atlanta to Savannah, laying waste as he went, leaving Georgia nothing but her courage to face the world again. Since the war Georgia farmers have learned wisdom; cotton is not the only crop grown. Everyone living along the eastern seaboard looks forward in the summer to eating the Georgia peach, and in the early spring Savannah sends shiploads of vegetables and fruit to Northern markets from the Georgia truck farms.

But Georgia is not only an agricultural State nor Savannah merely a commercial city. The wives and daughters of Oglethorpe's soldiers used to sit in front of their cottage doors spinning rough homespun from the fine long staple cotton which grew in such perfection on the sea-islands of the coast; indeed, this home industry grew to such an extent in the days preceding the Revolution, that the English Government became alarmed for fear English mills would go out of business, and sternly forbade any more manufacture of cotton in the southern colonies. After all cause for such interference was removed by the winning of our independence, Savannah began to develop manufacturing. One industry leads to another, and with a great naval stores industry at hand, there was a demand for barrels which Savannah could most profitably supply. Naturally paints and oils are made where turpentine and

BAY STREET
On the right are warehouses skirting the river front.

rosin are at hand. Fifty years ago cotton seed used to be burned as so much waste, to-day the by-products of this seed form one of the great industries of Savannah. The finest kind of table oil is made from it, as well as soap and cottolene, a substitute for lard. From the oily mass remaining a nourishing food for live stock and a fertilizer for the land is prepared. What a wonderful plant, to furnish clothing for man, food for himself and his cattle, and to return to the soil the very elements which its growth took from it! You will find, therefore, in Savannah that the Cotton Exchange is a prominent building. It is prettily located on the river bluff with an entrance facing a little park, where the cotton plant with its yellow bloom in spring and its snowy pod in summer forms an appropriate decoration.

Life in Savannah is pleasant at all seasons, but winter and spring attract the most visitors. The Gulf Stream brings to this coast the climate and plants of the Tropics, but because of the tempering sea-breeze and the grateful shade, even the days of the nearly vertical sun are seldom uncomfortably hot. Sea-islands and winding waterways offer recreation for holidays, and good hard shell roads make many of these places accessible. Since the days of Washington, Savannah has entertained many distinguished visitors. The spirit of hospitality is in the air and those who have once felt the charm of the "Forest City" are sure to want to come again and again.

AN AVENUE OF LIVE OAKS
On one of the beautiful drives out of Savannah.

QUESTIONS FOR STUDY

1. On an outline map of the United States locate Wilmington, Savannah, Jacksonville. Write or print names neatly and draw a heavy red line under each, with two under Savannah.
2. Locate on map used in Question 1, Macon, Montgomery, Jackson, Shreveport; also Chattanooga and Atlanta. Draw

railroads connecting Savannah with these cities, and indicate cotton routes to New York, Boston, Liverpool, and Bremen.

3. What is meant by a "gate city"? How is Atlanta a "gateway"? Pittsburgh?
4. The name *Savannah* is of Indian origin and means an open plain or grassy meadow. What other cities described in this book have Indian names? What cities have Spanish names? French names? English names?
5. How many times has Savannah been besieged? By whom? (Consult your history textbook.)
6. Locate the *Landes* country. Write a short composition comparing this country with the coast of Georgia, as to location, industries, cities, exports. Tell in what ways the locations of Bordeaux and Savannah are alike.
7. What is a "still"? (Look up the origin of the word in a dictionary.) Try to get some specimens of rosin, turpentine, pitch. Explain their uses. Why are these products called "naval stores"? Examine the picture of the naval stores, and tell to what ports these barrels will go.
8. Between what States is the Savannah River a boundary? Find other rivers of the United States which are boundaries. What river bounds part of United States and Canada? United States and Mexico?
9. Write a composition telling about the uses man makes of the cotton plant. Consult books of reference in the library and thus add to the knowledge gained in this chapter. Arrange your ideas in one or two paragraphs.
10. What features of the city mentioned in this chapter do you find in the pictures?
11. Examine the picture showing the live-oak trees. Have you trees as large about your home? Try to find out something about the gray moss which hangs from these trees.
12. Does spring come first to your home locality or to Savannah?

13. Tell all the reasons why you would like to live in Savannah.
14. How does Savannah rank in the value of its exports with other seaports of the United States?
15. Learn the location of all the cities mentioned in this chapter.

EXERCISES FOR WORLD REVIEW

1. How many miles from the mouth of the river is Savannah situated? Compare this location with that of New Orleans, Hamburg, London, Philadelphia. As steamships increase in length, what disadvantage will there be in such a location?
2. Make a list of the countries noted in this chapter which send naval stores to the United Kingdom. Opposite each write the seaport from which the stores are sent.
3. In what direction from the Panama Canal is Savannah? Which city is nearest the Canal, Galveston, New Orleans, or Savannah? What advantages does the water front of Savannah offer for trade *via* the Canal?

BOSTON

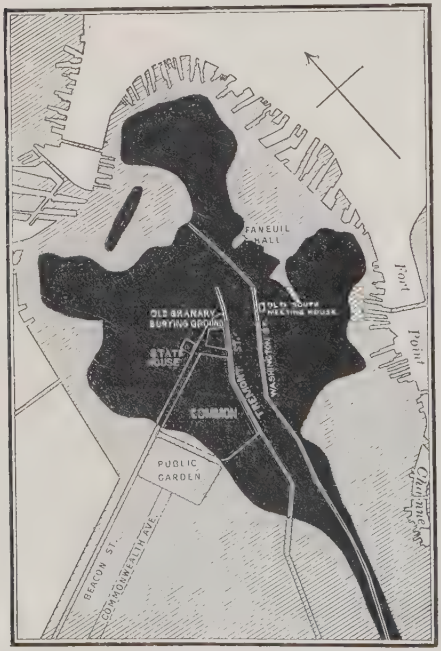
The rocky nook with hilltops three,
Looked eastward to the farms,
And twice each day the flowing sea,
Took Boston in its arms.

RALPH WALDO EMERSON

PROBABLY no city in our land is more honored by its citizens and by all Americans than Boston. How natural that this should be so! Other cities have their treasured shrines, San Francisco its Spanish Mission, Pittsburgh its battered fort, New York its Bowling Green, and Seattle its Totem Pole; but to most of us Boston means more than any of these; it means Lexington and Concord, Faneuil Hall and the Old South Meeting-House, Bunker Hill and the Washington Elm; it means a host of men and women who by spoken or written word and brave deeds have taught us lessons of liberty and justice and unselfish devotion to country.

Thus it is that the boy or girl on a first visit to Boston makes a bee-line for the maze of winding streets which marks the old Boston of colonial and Revolutionary days. Who would wish to miss getting lost in this intricate tangle! Perhaps you have already had an experience similar to that of the gentleman who, seeing the dome of the State House above the tree-tops and asking the

way thither, was told to turn about and walk in the opposite direction! A curious plan for a city, you think. That is because you have grown up in a country whose cities and towns are laid out after the same rectangular pattern, streets or avenues running generally north and south crossed by streets running east and west. Such a plan is orderly, but it allows of no short cuts, neither does it take advantage of physical features such as a river or lake, or hills and valleys, that give variety and beauty to a city aspect. In San Francisco and Seattle, streets march defiantly up hill and down dale, making steep grades that would be impossible in a city visited by snow and ice. In these cases, as in many another in our



BOSTON, OLD AND NEW

Practically the entire area of the original city is indicated by the heavy shading. The newer portions, only partially included in this map, stand upon made land, indicated by the lighter shading.

Western country, the city fathers laid out miles of streets before there were any inhabitants to dwell on them. Boston was not planned beforehand by the colonial fathers of 1630. The truth is, that not one who came with John Winthrop when he

LOOKING DOWN TREMONT STREET TOWARD BEACON HILL

Note the winding street and the State House. In the foreground is one of the entrances to the Subway which passes under the Common. The Granary Burying-Ground referred to on page 165 is just beyond the church (Park Street).

migrated from Salem to the rocky, pear-shaped peninsula jutting into the sea had any thought of founding a great city. The only superiority claimed for this new location of the Massachusetts Bay colony was that it had plentiful springs of water, a commodity that Salem lacked. The very unevenness of the peninsula with its deeply indented

coves, its promontories and hills, made it impossible to have regularity in its floor plan; so the colonists placed their simple houses wherever their fancy led them, some along the water front, others near the springs, or on the slopes of the Trimountain which gave the settlement its early name. Corn, you remember, was a native product; and since a food supply was the first thing to provide for, one of the earliest buildings was a windmill for grinding grist, placed far out at the north end so that the breezes that always played around the bay should keep its clumsy arms steadily at work. A little to one side was a cleared space of fifty acres which was reserved for pasture land, common to all citizens of the town, and for a training field where the militia could drill. Before long, little paths were worn from house to mill and spring, from house to Common, to church and school; and these lanes, trodden into highways by nearly three hundred years of passing and repassing, form the curiously irregular streets of old Boston. On the excellent map of Boston Old and New, on page 162, you will be able to trace one or two of these historic paths. Washington Street twisted and turned from the slopes of Sentry or Beacon Hill out along the narrow neck that tied the peninsula to the mainland. On this street, history tells us, John Winthrop had his house; and here later was built the Old South Meeting-House, to-day the Mecca of all patriotic Americans. Near by was the first church and the

school, and on the summit of the hill overlooking the green pasture land they placed a beacon where a warning light was to flash if danger threatened. To defend the town, a fort was built on the eastern peninsula, guarding the harbor on whose waters many strange craft later lay at anchor. You see how this little community took shape, providing first for those needs of man which are universal,—shelter, food, clothing, protection, instruction; there remained only to reserve space for that without which no human group is ever complete. In the Old Granary Burying-Ground lie many of the noted personages of historic Boston — Hancock, Samuel Adams, Paul Revere, Governor Bellingham, and others whom you may some day discover for yourselves.

WASHINGTON STREET

A part of the principal business street. Note the narrow driveway and the crowded sidewalks.

Now that you are somewhat familiar with the outline and plan of old Boston, you will like to look again at the map to see how succeeding generations have altered and enlarged the city bound-

aries. Does it strike you that they have added more land than the original could boast of? This is exactly what has been done. How the water front has been straightened by filling up coves and building out wharves! The deep indentation made by the mouth of the Charles River, which was called the Back Bay, has been filled in, new streets created, and Boston fastened securely to the rest of Massachusetts. Along these broad avenues hurry the great throngs that go in and out of Boston every day. It is easy to distinguish the old city from the new, for there are no twistings and turnings in these new streets, all is ordered for ease of travel in a great metropolis, the corners are square, and there is no danger of missing one's way.

At first Boston had not apparently much advantage over the mother town of Salem. The little boats of that day came quite as readily to Salem as to Boston; but the days changed, and when ships grew larger they flocked into the spacious waters of Boston Bay, while Salem went to sleep. Nature surely placed here superior advantages for a seaport. Long sheltering arms of the land on the north and south curve around a more open outer bay and converge upon an inner almost landlocked basin, with a shore-line made irregular by peninsulas and islands behind which lie the mouths of three tidal streams. Many of the great harbors of the world are narrow and winding and

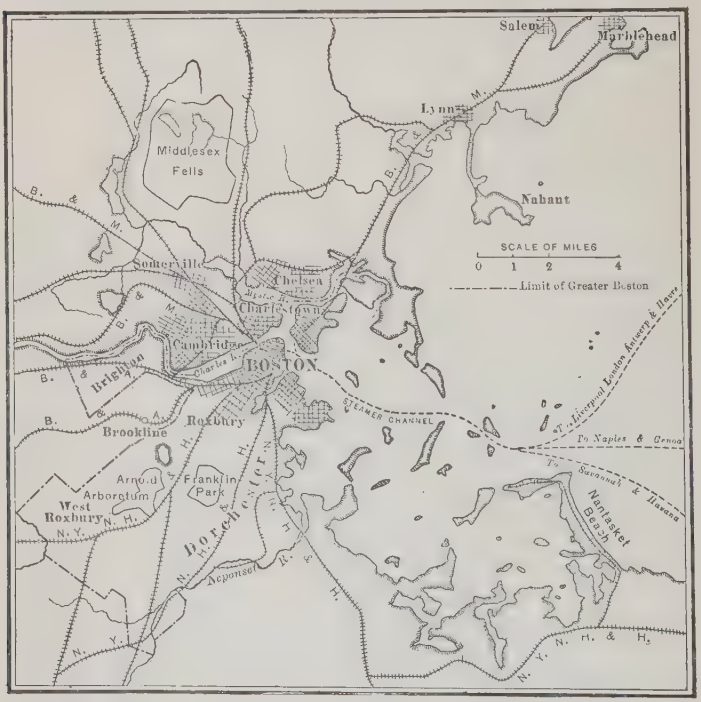
obstructed by sandbars; others, like Galveston and New Orleans, require sea walls or jetties to make them safe and navigable; but three broad deep channels lead into the harbor of Boston, where shipping lies protected during the fierce storms which often rage outside along the "stern and rock-bound coast." With such a safe and ample gateway looking out to the Atlantic, it is

COMMONWEALTH AVENUE

This beautiful wide street is in the Back Bay district and is all made land. See the map on page 162. The Avenue begins at the Public Garden.

no wonder that Boston began early in its career to be the most important city in New England, the "Hub," in fact, of this busy corner of our country. Those who first applied this nickname to Boston

were very ambitious, and made the wheel large enough to include the universe, Oliver Wendell Holmes declaring that the Boston State House



BOSTON AND VICINITY

The principal railroads entering Boston are: the New York, New Haven, and Hartford; the Boston and Maine; the Boston and Albany.

was the "Hub of the Solar System." But though the wheel is smaller than some Boston people like to think, it revolves so rapidly that many another industrial wheel in our land is set in motion by it.

Lay a map of New England before you and

A VIEW IN FRANKLIN PARK

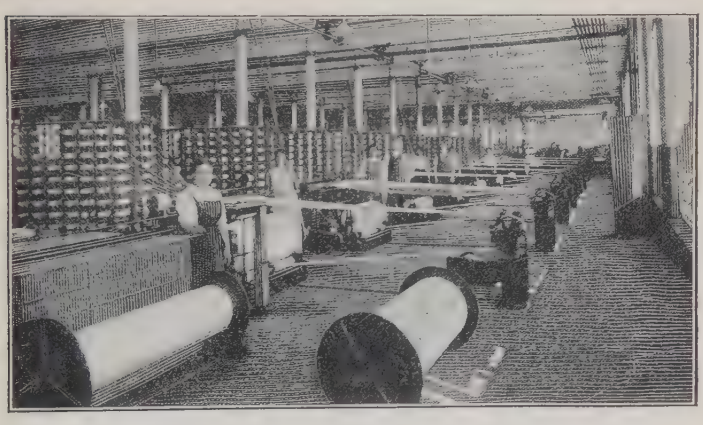
Near this spot are public golf-links and tennis courts. This view gives an idea of the many varieties of trees and shrubs and other natural features of one of the finest park systems in the world.

draw on it a circle around Boston, using the distance from the western boundary of Massachusetts to Boston as one of the spokes. Follow the tire of this wheel around its whole circumference, and you will see that nearly every large city of New England lies within it. Note where the spokes run — from Boston to Portland; from Boston to Lowell, Manchester, and Concord; from Boston to Fall River; from Boston to Providence, New London, and New Haven; from Boston to Springfield and beyond to Albany; from Boston to Fitchburg and the Hoosac Tunnel. These spokes are lines of steel running from busy centers of population to the central market by the sea. The nearer you get to the market, the more thickly peopled is the region. Within twelve or fifteen miles of Boston

are thirty prosperous towns which have grown up in a ring of settlements around the great seaport. Some of these, Dorchester, Roxbury, Charlestown, are now a part of the city proper; but out beyond this inner ring, nestling on the hills that encircle Boston on the west and north, is the outer ring of towns and villages which are really a part of Greater Boston. No other city in our country has such beautiful suburban towns, because the rolling surface, the streams winding around the hills, the lakes and ponds in the hollows, the bold capes jutting into the sea with beaches between them, form the most tempting places imaginable for homes. The people of Boston have reserved 17,000 acres of this lovely country for a great playground. Think of a series of parks containing broad tracts of grassland and forests, ocean shores, ponds, brooks, and hills, forbidden to the trader and builder and preserved for future generations of boys and girls!

Among these towns encircling Boston are many which have become household words throughout our land, — Lowell, Lawrence, Lynn, Haverhill, Waltham, Brockton. The making of cotton and woolen clothing, underwear, hosiery, shoes and slippers, overshoes, watches, salted fish, chocolate, and candy, are only a part of the industries which center in this Boston district. For with a safe and roomy harbor facing the Atlantic on the one hand, and abundant water-power in the falls and rapids

of many rivers on the other, the intelligent and energetic New England people of the early days began to manufacture as soon as they were freed from the interference of England. Because of the ease with which raw materials could slip along the



THE SPINNING ROOM IN A COTTON MILL

ocean highways, mill wheels and spindles multiplied so rapidly that Boston soon began to take high rank as a port. Steamers bring wool for New England looms from Sydney and the Plata River, long and short-staple cotton comes from Savannah and Egypt, coffee from Brazil, fish from the Newfoundland Banks, sugar from Cuba, rubber from Para, tea from China, and bananas from Central America. These form some of the imports piled on wharves, stored in warehouses, or hurried to waiting cars. Perhaps you have never thought of coal as an import; if so, it may

surprise you to learn that Boston's coal bill amounts to over $100,000,000 a year, more than half this amount being paid for its transportation from Nova Scotia, Newport News, and Philadelphia. This explains why one of the most common sights in the harbor is a picturesque string of coal barges being towed to the tall coal pockets towering along the water front.

A stroll through the business section of the city is interesting for two reasons: it will take you into "old Boston," and if you have the observant eye, your ideas of the sorts and kinds of business which all this manufacturing develops will be very much enlarged. People in the same kind of business generally group together, and you will find all the wool concerns in one section, the leather dealers in another, and so on. In one street in the leather district three hundred shoe and leather concerns have their offices. This makes it convenient for those who come to Boston to buy and sell. Here are dealers in hides and skins, in cut soles, in tanners' oils, also houses for selling shoe machinery and all kinds of supplies which shoe manufacturers use, rubber shoe companies, offices of the great shoe factories at Lynn, Haverhill, and Brockton, and even firms which buy waste leather, selling it again for all kinds of purposes, scraps as small as an inch square having their value. All these industries allied to shoemaking have grown up since colonial days, when shoemakers from Massachusetts trav-

eled with their kits from house to house making shoes for the family. To-day steel fingers have taken the place of shoemakers' hands, doing the work so nimbly and well that orders come to the "Hub" from nearly every State in the Union and nearly every country in the world, and Lynn alone makes shoes for 30,000,000 people. So Boston has become the greatest shoe and leather market of the United States, as well as one of the chief markets for wool, salted fish, foodstuffs, and candy.

Courtesy, T. G. Plant Company.

A VIEW IN A SHOE FACTORY

One half of all the manufactures of Massachusetts and one quarter of those of New England center around Boston, and as you walk through its busy streets you understand why the generations that

succeeded the Puritan colonists had to make over and enlarge the rocky peninsula to meet the changes that each age has brought with it.

In spite of all these changes, there are some things that would make good old Governor Winthrop feel at home could his spirit walk the earth again. He would miss the beacon on the hill, it is true, but he would catch the flash of the gilded dome of the State House that surmounts this hill, and know that it stands for the security and defense of the liberties of the Commonwealth of Massachusetts. He would surely recognize the grassy slopes of the Common, where his cows were wont to graze, though he would look in vain for the waters of the bay that used to wash its shores. Some one would have to explain to him that the great funnels of the ocean liners along the harbor's edge are the descendants of the masts of his sturdy little boat, "Blessing of the Bay," which he launched with such pride in 1634; but he would understand that the naming of that craft had been prophetic of the blessing this great landlocked basin has been to Boston, to New England, and to the country at large.

QUESTIONS FOR STUDY

1. Draw a sketch map showing the original peninsula of Boston and the additions that have been made to it. Indicate by a cross the location of the State House and write the names of waters surrounding Boston. Give this

map an appropriate name and make the drawing clear and attractive.

2. Locate Salem. Compare its location with that of Boston in regard to advantages for trade.
3. Tell in what ways Boston Bay differs from San Francisco Bay. Which do you think is more beautiful? Compare the maps on pages 2 and 168.
4. Draw a general plan of the streets of the place where you live. Below this drawing write a brief story of the founding and settlement of the place; tell which are its oldest streets and what the first buildings were.
5. What is meant by a place being a "Mecca"? Where is Mecca and for what is it noted?
6. Tell something of importance that happened in the Old South Meeting-House.
7. On an outline map of New England draw the wheel as directed on page 169. Locate the chief cities and towns within this wheel, consulting the map in your geography for their location. Draw the spokes as directed. Give the map a good title and make the whole drawing as neat as possible.
8. Make a list of the chief rivers of New England that furnish water-power, and opposite each place the names of the manufacturing towns on each river.
9. On the sheet used in Exercise 8, add in a third column the chief manufactures of New England. Try to add to those mentioned in this chapter. Give the exercise its proper headings and underline these to set them off from the exercise itself; for example, Rivers, Towns, Manufactures.
10. Find out if possible where the shoes you are wearing were made; the stockings; the writing paper you use. Was your watch made at Waltham? At Waterbury? Look at the label on the thread you use at home and tell where it was made.
11. Coal comes to Boston by rail and water. Trace the coal

routes from Pennsylvania, from Nova Scotia, and from Newport News, to Boston.

12. Where does the coal used in your home come from? Describe the route it takes. How much coal is used in your home in the course of a year? What does it cost?
13. Describe the routes by which hides from Wyoming or Montana and from Sydney or Argentina reach Boston.
14. Why is Boston well situated for a capital city? How does its location with regard to the State differ from that of Springfield, Illinois?
15. For what purpose is the State House used? Where is there a similar building in your State? What is it called? Which cities in this book have such a building?
16. What would you most enjoy seeing in Boston? What advantages does Boston have in the summer over St. Louis? over New Orleans?
17. How old is Boston? Learn the stanza at the beginning of this chapter.

EXERCISES FOR WORLD REVIEW

1. London and Boston are the two largest wool markets of the world; from what countries and ports is wool shipped to these markets?
2. What kind of climate is common to these wool-producing countries? (Consult temperature and rainfall maps in your geography textbook.)
3. Consult lists in Appendix and see how Boston compares in value of imports with New York, Philadelphia, New Orleans, San Francisco. How does Boston rank in value of exports? Which cities rank higher?
4. Which is farther east, the mouth of the Charles River or that of the River La Plata? Which is farther north, the mouth of the Thames or that of the Charles? Which city, London or Boston, has a longer period of daylight on Christmas Day?

NEW YORK

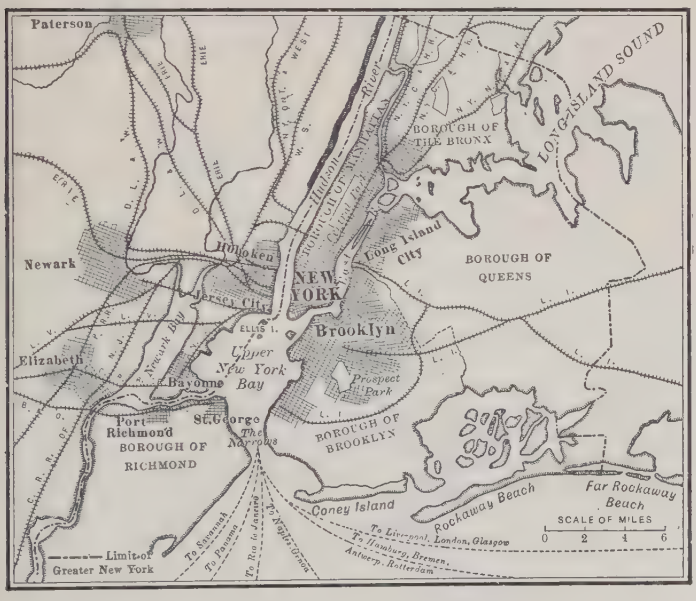
THE history of cities does not show us anything so amazing as the growth of New York during the last century. In the year that Washington was inaugurated President, the area now covered by Greater New York had a population of nearly 50,000; in 1910 that number had increased to 4,766,883. A hundred years ago no city in the world had reached these huge proportions for before the days of railroads and other quick means of transportation it was impossible to supply food sufficient for the daily needs of so many people. It is hard to picture a city group of nearly five million souls; even those who live in New York do not realize how big it is. If all the inhabitants of California, Oregon, and Washington, should take up their abode in one city, it would not then be as crowded as New York. Add St. Louis to Greater Paris and the sum does not equal this great metropolis; and if you were to take the sum of the populations of all the Representative Cities — but you will enjoy finding out for yourself just how many of these it will take to make a New York.

By this time you are surely asking what has brought so many million people to this city and where they have all come from. You also may be

interested to learn how they live, shut up within the confines of city walls and crowded streets instead of being spread out over the three large States of the Pacific Coast; for the life of a New York boy is very different from that of a boy or girl in Seattle or Portland.

You have learned that every port is a gateway opening, on the one hand, to the ocean with its cheap and easy routes of traffic, on the other hand, to the land where railways and inland waterways converge and merchandise is exchanged. But though San Francisco is the gateway of a great State, and New Orleans the port of a fruitful valley, New York is the sea-gate of a continent. And such a gateway as it is! For it not only opens wide to the most traveled ocean on the globe, but this ocean passes through the gate into the continent for one hundred and fifty miles from the mouth of the Hudson, whence an easy road leads westward along the Mohawk Valley, by the shores of the Great Lakes, and across the level prairies and rolling plains to the foot of the Rocky Mountains. New York has become the greatest city of North America chiefly because it stands at the entrance of this broad smooth road which leads for over two thousand miles into the heart of a continent. It is this highway that has made the fortunes of the city. For many years Boston was a more important port than New York, and both Philadelphia and Baltimore were its rivals; but

after the Erie Canal was built and the wheat, corn, and meat of the Middle West could slip cheaply along a thousand-mile waterway to a market, New



NEW YORK CITY AND VICINITY

The principal railroads entering New York are: the New York Central; the New York, New Haven, and Hartford; the Pennsylvania; the Baltimore and Ohio; the New York, Ontario, and Western; the Lehigh; the Erie; the Central of New Jersey; the Delaware, Lackawanna, and Western.

York began to grow. All the fertile valley of the upper Mississippi became its great hinterland, and from that day to this, ships from the ends of the earth have flocked to its wharves because they were sure of finding return cargoes there. How many advantages have contributed to the great-

ness of New York! Beside the fruitful hinterlands of the Mohawk Valley and the Middle West, beside the deep and navigable Hudson, it looks out on a spacious harbor, one of the best and most beautiful in the world. Protected from storms by the bulging shores of Staten Island and Long Island, ships that have buffeted with wind and wave outside Sandy Hook steam through the gateway of "The Narrows" into the quiet waters of the inner bay. To how many a stranger fleeing from hard conditions in his own land have these smooth waters, lighted by the torch of the Goddess of Liberty, seemed like a haven of refuge Sometimes, it is true, the hope is not fulfilled in this land of ours, but to the majority who come, this open doorway has been the entrance into a real "Promised Land." Because of the spacious and protected harbor, with its four hundred and forty miles of water front brought within easy reach of the interior by a "water-level route," nearly one half of the foreign commerce of the United States passes through New York. Of the imports pouring in through all our ports, more than one half comes through New York, and out of New York passes nearly one half of all the exports from all the ports of the United States. One of the most beautiful buildings in New York is the Custom House, where the business of collecting the duties on foreign goods is managed; and as a large part of the expenses of our government

are met by these custom duties, it is most fitting that such a government building should be ornamental to the city.

Besides its foreign trade, New York bears a large share of the domestic commerce of the country. This is because New York is at a great cross-roads of commerce. How vividly the map shows the waterways which meet here! The Hudson-Mohawk River coming from the north and west

NEW YORK CUSTOM HOUSE
It is imposingly located opposite the historic Bowling Green.

meets the oceanway from the south and east, and across this line of travel the East River and Long Island Sound offer a deep waterway between New York and New England. Along these natural highways two great railroad systems have laid their tracks. Other roads have boldly climbed the rugged mountains and plateaus of northern New Jer-

sey and western New York in order to get a share of the carrying trade between the Mississippi Valley and the sea. Eight great trunk lines come to New York, but all those from the west and south, except the New York Central and Pennsylvania Railroads, land passengers and freight on the other side of the Hudson at one of the Jersey ports. This necessitates crossing the river for all passengers and freight destined for New York or New England. Cars are run on to big floats and transferred to ports on the East River, where they are made up into trains for Boston and way points, and passengers are ferried across. But this is slow work for people in a hurry, and sometimes boats are delayed on account of fog. Years ago the Pennsylvania Railroad began to plan to tunnel under the Hudson River so as to be able to deliver passengers directly in New York. It was a gigantic task, but men of skill accomplished it, and the magnificent Pennsylvania Terminal Station is now the visible result. One can hardly imagine the Temple of Solomon any more wonderful than this railway station, equipped inside with every comfort for the traveler and with an exterior that adorns the city. Not far from it rises the Grand Central Terminal, another titanic undertaking, anchored to the rock foundation of New York and built over the old outgrown station while hundreds of trains carrying thousands of passengers were sent in and out daily.

From an architect's drawing.

GRAND CENTRAL TERMINAL

This undertaking includes not only the recently completed terminal station of the New York Central lines, but the reclaiming of some twenty city blocks (formerly used for railroad yards) and the erection thereon of commercial and office buildings, hotels, apartment houses, etc. A number of these are already constructed, and others are in process; so that the ideal of the architect's bids fair speedily to be realized.

One great item of traffic that keeps railroads, boats, and steamers in the vicinity of New York busy is supplying the city with food and fuel. The greater part of this domestic trade is carried on while the city is asleep. Special milk trains and those bringing butter, eggs, vegetables, and fruit stream into the city all through the night. Coal barges come down the Hudson from Kingston, or across from New Jersey where the coal has been brought by the great anthracite road of Pennsyl-

vania. In the summer Long Island and southern New Jersey are one vast market garden, and every day cars and wagons follow each other unceasingly, bringing asparagus, cabbage, potatoes, poultry, and all kinds of garden truck to five million hungry people. Beef from Chicago is transferred from refrigerator cars to waiting steamers or put into the large storage warehouses along the line of the New York Central Railroad. The mere handling of these food supplies and other merchandise creates a tremendous business. All raw material intended for manufacturing must be carted to factory or warehouse, and food must be loaded on to wagons and carried to markets, so that those streets which are main arteries of traffic are crowded and dangerous. Steamers follow so fast one after the other that as soon as one unloads its cargo the wharves must be cleared to make space for the next one.

How many interesting things there are to see on these wharves while steamers are loading or unloading! It is better to study geography in this way than to learn it out of a book, and the romance that always hangs about a ship from over the sea is sufficient to keep one's enjoyment at a high pitch. The following is a partial list of the things a New York girl saw one October day on the Chelsea docks where two steamers had just deposited their cargoes.

Paper and Christmas toys from Germany.
Rags and hops from Belgium.
Tea and biscuits from England.
Fish from Portugal.
Canned mushrooms and peas from France.
Hemp from Manila and New Zealand.
Jute from Tampico.
Box trees and ornamental shrubs from Belgium.
Raw silk from Italy.
Condensed milk from Switzerland.
Pears' soap from England.
Rubber from the Congo and Pará.
Sardines from France.
Pelts from New Zealand.

On the Brooklyn water front she saw a steamer from Montevideo unload an enormous cargo of raw hides. The odor of these skins was not agreeable, but she was amazed to see such a quantity. She learned they were bound for the tanneries to be made into leather for the shoe factories of New England. At these docks also a large part of the coffee that enters the United States is unloaded and stored. Do you remember which Representative City is a rival of New York in this trade? Here the Norse Prince brought from Brazil 128,200 bags of coffee, each bag weighing 132 pounds, yet the longshoremen who handle this freight pick up a bag as easily as you would a baby and carry it from the moving crane, which you see in the picture, to the proper piles. Near the coffee bags are big heaps of Brazil nuts waiting to be sorted and bagged, and there are cotton bales from Galves-

ton, New Orleans, and Savannah, awaiting reshipment to the Sound boats for the Fall River cotton mills.

It is not strange that most people think of New York chiefly as a commercial city, for the picturesqueness and importance of its harbor overshadow all else, yet it leads all other American cities in manufacturing. All the favorable conditions for industry except one are found here. Carriers by land and water bring raw material from far and near, coal is easy to get because of canal and rail communication with Pennsylvania mines, and car and steamer are ready to carry away the finished products. Of the thousands of foreigners who land at New York, many stay in the city and offer their labor cheaply. As the city grows, there are more people to consume food and to buy clothing; factories, therefore, find a large market right at their doors. New York is one of the chief flour cities of the country and makes many varieties of cereal breakfast foods. Much coffee also is roasted here. But its greatest industry is the making of clothing for men and women, boys and girls. This is made in little factories, in sweatshops, and at the homes of the workers; and because much of the work on these garments does not call for skillful workmen, a large number of the ignorant and unskilled immigrants who land in New York remain in the city and make clothing for you and me to wear. On the Brooklyn water front, the groups of grimy

buildings with their tall chimneys tell where sugar and molasses from the West Indies are refined. In the Borough of Richmond, distant from the more settled residence portion, petroleum, piped

Courtesy, New York Dock Company.

BROOKLYN WATER FRONT, ALONG THE EAST RIVER

Note the fire-proof warehouses and the piles of coffee bags waiting to be stored.

or sent in tanks from the Pennsylvania oil wells, is refined. It forms one of the chief exports of New York, for the United States has only one competitor in the oil trade, and that is Russia.

The second manufacture in importance is printing and publishing. Look over the monthly magazines in your Public Library and see how many of them are published in New York. Perhaps you can tell the names of some of the New York newspapers which find their way all over this country. Everything seems to come to this great metropolis,

and people come, too, because there is so much work to be done. Not the smallest part of this work comes from stretching the city to accommodate all who want to live in it. If the inhabitants would distribute themselves evenly over the five boroughs which make up the city, living conditions in the central borough would not have so many drawbacks. The trouble is, the majority have to live in Manhattan to be near work or business; so on the little island that Peter Minuit bought from the Indians for twenty-four dollars are packed together, in some portions, as many as one thousand on an acre, and the value of the land has risen into the billions of dollars. The Island of Manhattan can grow only in one direction now, and that is skyward. In the place where you live your neighbor probably lives beside you; in New York he would live over you or under you, and you would have so many neighbors that you could not be expected to know them, so they would not be neighbors at all. Land in New York is too valuable for people to have houses with gardens around them, so houses are placed one on top of the other, and no one has a garden. These apartment houses, as they are called, are often twelve or fifteen stories high; and when the four sides of a city block are built up solidly, those who live on the lower floors get very little sunlight. As there are no yards, New York boys and girls must play in the streets, where electric cars, auto-

mobiles, and trucks are constantly rushing back and forth. There are parks, of course, where some can play, but the most beautiful are far from the heart of the city. The boys and girls

A PICTURESQUE SPOT IN CENTRAL PARK

Note the three large hotels on Fifth Avenue at the Park entrance, and the tall apartment houses.

of one large school have to travel six miles to reach their athletic field, so there are some disadvantages in living on an island city.

But it is in the downtown section of the city that the real sky-scrapers are found.[1] Now that we have learned to put up steel frames and anchor them to bed-rock, and now that the electric elevator has

[1] Study the buildings shown in the frontispiece illustration.

been invented, there is apparently no end to the height these buildings may reach. No sooner is the "highest" office building erected than the next year sees an additional story or two on another building. These lofty towers house people enough to make a good-sized town. In the Hud-

SKY LINE OF LOWER NEW YORK
At the left is the Woolworth Building.

son Terminal Building there are four thousand offices, in which from six to ten thousand persons are employed. This is a city in itself, and is so completely fitted up that a man can lodge there, take his morning bath, get shaved, have his shoes blacked, buy his cigar and newspaper, and get

all his meals, without once going outside. These modern office buildings are truly a New York invention, made necessary by the small space available for business. The latest sky-scraper boasts of fifty-five stories, being higher than the Pyramids, higher than anything man has reared except the

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FROM THE HUDSON RIVER

A continuation of the picture on the opposite page.

Eiffel Tower in Paris. When the day's work is over, a dense throng pours forth from these high steel cages. They crowd along the narrow streets that are a heritage from old New York, they push into subway or surface cars, into ferryboats or

A CONGESTED TENEMENT-HOUSE SECTION

trains, all tired and hungry and eager for home. Many thousands live in New Jersey and Connecticut and on Long Island. The Subway, which runs underground nearly the whole length of Manhattan Island, carries so many passengers that it is as if nearly the whole population of Philadelphia were emptied out every day. And all these people find work in New York, for the city is the pivot of the nation; its banks lend money to enterprises all over the land, its gold is sent West to harvest our crops, and the crops are bought and sold in New York's great exchanges, the prices paid being telegraphed all over our country as well as across the Atlantic.

New York is one of the greatest cosmopolitan cities, forty-one foreign countries sending their

consuls to New York to look out for their trade and to help citizens who may be living or visiting in the city. There are more Germans in New York than in any German city except Berlin. The Irish police the city, the Italians dig its subways, Greeks sell fruit and flowers, the Russian and the Pole make clothing, and negro boys from the West Indies run the elevators in the apartment houses. There are quarters in the city where one hears only Italian spoken; the Hungarians herd by themselves; the Syrian, the Roumanian, the Arab, each hears his own language, though his children are taught English in the schools. Each nationality brings something to the life of the city, and the whole big family of nearly five million people lives safely and for the most part contentedly together. There is much to make life in New York happy, even for the boy or girl who might be better off in the country. Some of the richest art treasures of the world are here, there is always life and movement on the street, and there is great opportunity for mutual helpful-

RIVERSIDE DRIVE
Showing Hudson River and the Palisades.

ness, for in city life one learns more easily than in the country to give up the things he would like to do for the sake of the public good. New York is a city nobly set, and public-spirited citizens are beginning to take an interest in keeping the beauty with which Nature has surrounded it. On both sides of the Hudson are wooded parks and drives, offering real country walks and quiet playgrounds. Up and down the lordly Hudson pass pleasure craft, regular passenger steamers to Albany, ferry-boats, and the little tugs which lead the monster ocean liners in and out of the bay. When the sun shines, as it does a good deal during the summer and fall and early winter, the air is dazzlingly clear, the river sparkles as it carries its broad flood out to sea, and everyone seems happy in this city at the Eastern Gate and ready to echo the words of Hendrik Hudson, "The land is as beautiful as the foot of man ever trod on."

QUESTIONS FOR STUDY

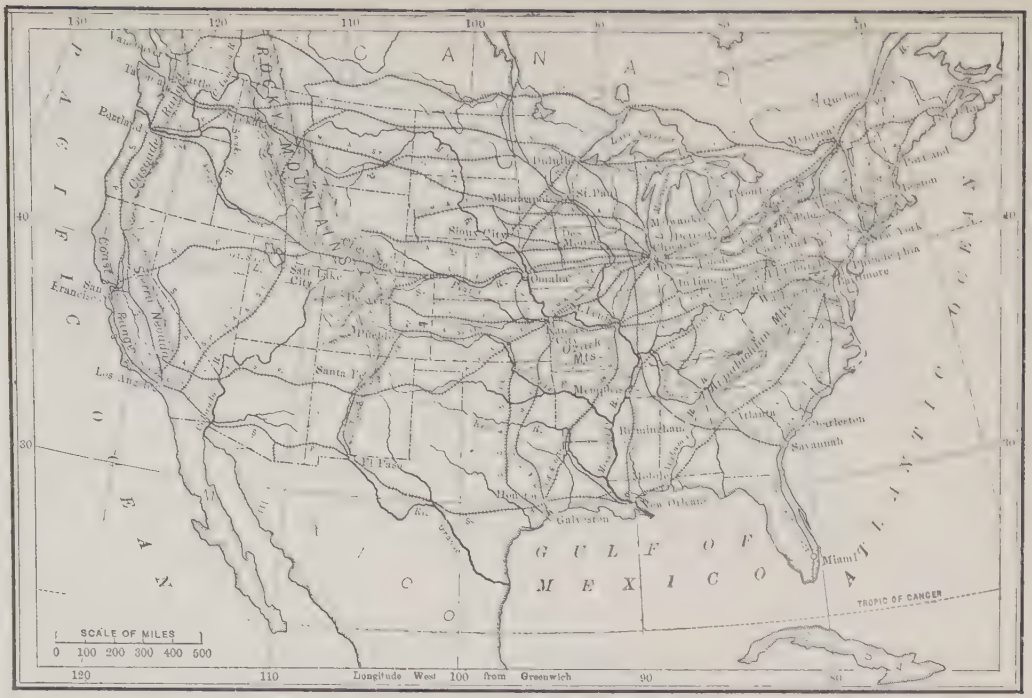
1. How many of the cities in this book have you found it would take to equal New York in population?
2. On an outline map of the United States draw the "water-level route" that leads from New York to Chicago. Locate the chief cities along this route.
3. Draw ocean routes from New York to the Representative Cities which are seaports. Use same map as in Exercise 2.
4. Write in one paragraph the chief reasons for the size and importance of New York.

5. Copy the list of articles the New York girl saw on the wharves, and opposite each write the name of the port from which the things were shipped.
6. Learn the location of every city and country named in Exercise 5.
7. Which city of the United States ranks next to New York in value of imports? Of exports?
8. Why should the imports of New York and Boston be so much greater in number and value than those of Galveston and New Orleans? Why should the exports of Galveston and New Orleans be greater in value than those of Boston?
9. How many loaves of bread are eaten in your family in a week? Calculate about how many it would take to feed the population of New York.
10. Examine the picture of the Brooklyn water front. What activities do you see for the unloading, storing, and transporting of foreign products?
11. What is the population of your home locality? How many the size of yours would it take to equal New York?
12. Describe the location of Long Island Sound and tell us how important it is as a waterway.
13. After studying the picture of the Brooklyn water front, describe how an ocean steamer is moored at its wharf.
14. Why do so many of the immigrants who land in New York remain in the city? From what foreign countries do they come in large numbers?
15. Try to find out some of the hard conditions under which these workers live.
16. At what other ports of the United States is sugar refined? Why at these ports? (Consult page 72 for your answer.)
17. Look over the textbooks you use in school and report how many are published in New York. Do the same for the books in your school library. Why should New York have so many daily newspapers? In what languages are they likely to be printed?

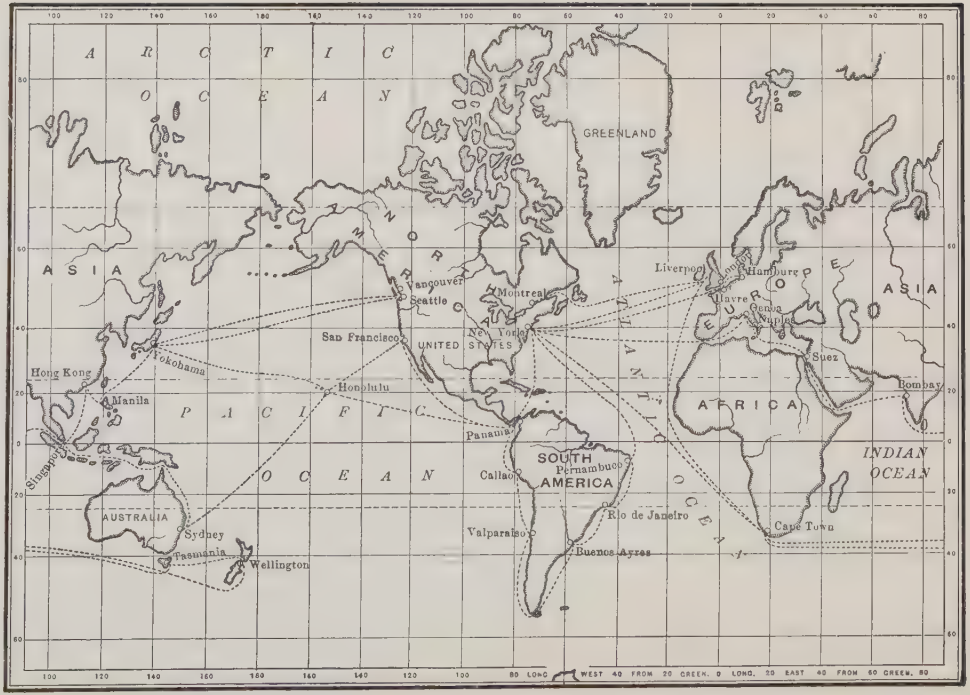
18. Why is New York a great financial center? Ask your father to tell you something about the New York Clearing House, the Produce Exchange.
19. What does the sky-line of lower New York tell you about the amount of business done in the city? Refer to the illustrations on pages 190 and 191.
20. What are customs duties? Why does New York have a Custom House? How do these duties affect the price of stockings sent here from Germany?
21. How high is your school building? How many such buildings would have to be put one on the other to equal the height of the latest sky-scraper in New York?
22. Collect some pictures of New York. Try to find some showing the beautiful parts of the city, the tall buildings, the Sherman statue, the Public Library, the Pennsylvania and Grand Central Stations, the Brooklyn Bridge.
23. What city of the United States lies at the Western Gate? Write a composition comparing the location of that city with that of New York at the Eastern Gate.
24. Would you like to live in New York? Why?
25. What three things would you like most to see in New York?

EXERCISES FOR WORLD REVIEW

1. Locate the famous island cities Stockholm, Venice, Montreal, and Bombay.
2. Select from the "Twenty-five Largest Cities of the World" in the "Reference Tables" those that are seaports. Arrange them in the order of their size.
3. Learn the location of every place named in Exercise 2.



RAILROAD SYSTEMS OF THE UNITED STATES



PRINCIPAL TRADE ROUTES OF THE WORLD

APPENDIX

GENERAL REVIEW EXERCISES

1. Examine a map of the United States and tell which river valleys are most thickly populated. Which of the "Representative Cities" are in these valleys?
2. Which of the "Twenty-five Largest Cities of the World" are located in rich valleys where travel is easy?
3. Which advantages of location account for the development of St. Louis, Cleveland, Cincinnati, Galveston, and Los Angeles?
4. Explain why industries grow up at a break in transportation. Show how this influence has been at work in the development of Buffalo, Cleveland, Antwerp, Cologne.
5. Read carefully Rule 6 ("Rules governing the Location of Cities"), then with a map before you study the locations of London, Hamburg, Shanghai, Melbourne, and Buenos Ayres, and tell in what respects their development has been similar to that of New York and San Francisco. Do you find a rich hinterland in each case?
6. Why is the head of a bay generally a more favorable location for a city than its mouth? Explain how Baltimore and Montreal illustrate this point.
7. Read carefully Rule 4 ("Rules governing the Location of Cities"), then study the list of the "Representative Cities" and name those which have developed manufacturing chiefly because of excellent means of transportation.
8. Which of the "Representative Cities" are found among the "Twenty-five Largest Cities of the United States"? Of the World?
9. From the list of the "Twenty-five Largest Cities of the United States" select those on navigable rivers; those on bays.

10. From the "Twenty-five Largest Cities of the World" select those which are capitals. Which are situated in the center of the population of the country?
11. Mark with a cross those of the "Twenty-five Largest Cities of the United States" you have visited or passed through.
12. What countries are represented more than once in the "Twenty-five Largest Cities of the World"?
13. Which of the "Representative Cities" are named after noted men? Which have Indian names? Which one has a name descriptive of its surrounding country?
14. Arrange the list of "Representative Cities" to show which have similar average temperatures in January; in July. Arrange them to show how they rank in amount of annual rainfall.
15. Write a letter to the author of this book telling her the names of the cities you have most enjoyed studying.

Outline maps for use in the Exercises are issued by the following firms: —

McKinley Outline Maps, McKinley Publishing Co., Philadelphia, Pa.

New Century Development Maps, Silver, Burdett & Co., Boston.

Harison Outline Maps, William Beverley Harison, New York.

Leete's Outline Maps, Longmans, Green & Co., New York.

AVERAGE TEMPERATURES AND ANNUAL RAINFALL OF THE "REPRESENTATIVE CITIES"

	Temperature		Annual Rainfall
	January	July	
San Francisco	50°	65°	20 inches
Portland	38°	65°	50
Seattle	30°	65°	40
Denver	25°	70°	15
New Orleans	50°	over 80°	60
Duluth	10°	65°	30
Twin Cities	10°	70°	25–30
Chicago } Gary }	25°	72°	35
Pittsburgh	30°	72°	40
Savannah	50°	80°	50
Boston	28°	70°	45
New York	30°	72°	45

RULES GOVERNING THE LOCATION OF CITIES

1. People are found in greatest numbers in regions of rich soil and easy travel; hence the rich valleys are most thickly populated.
2. Valleys and plains are natural routes for canals and railroads.
3. To make an industry possible, men must be able to sell their products and deliver where desired; hence transportation means are demanded.
4. Where transportation facilities are best, all kinds of industries flourish.
5. Industries grow up where a break in transportation occurs.
6. If a country back of a coast is desert or barren, no large

city is likely to grow up there. If a navigable river leads to a back country rich in agricultural or mineral products, industries and commerce flourish.

7. A commercial city must get as close as possible to its hinterland; therefore the head of a bay is generally a more favorable location than its mouth.

THE TWENTY-FIVE LARGEST CITIES OF THE UNITED STATES, 1930

CITIES	POPULATION
New York, N. Y.	6,930,446
Chicago, Ill.	3,376,438
Philadelphia, Pa.	1,950,961
Detroit, Mich.	1,568,662
Los Angeles, Cal.	1,238,048
Cleveland, O.	900,429
St. Louis, Mo.	821,960
Baltimore, Md.	804,874
Boston, Mass.	781,188
Pittsburgh, Pa.	669,817
San Francisco, Cal.	634,394
Milwaukee, Wis.	578,249
Buffalo, N. Y.	573,076
Washington, D. C.	486,869
Minneapolis, Minn.	464,356
New Orleans, La.	458,762
Cincinnati, O.	451,160
Newark, N. J.	442,337
Kansas City, Mo.	399,746
Seattle, Wash.	365,583
Indianapolis, Ind.	364,161
Rochester, N. Y.	328,132
Jersey City, N. J.	316,715
Louisville, Ky.	307,745
Portland, Ore.	301,815

THE TWENTY-FIVE LARGEST CITIES OF THE WORLD

London	7,742,212
New York	6,930,446
Berlin	4,297,000
Chicago	3,376,438
Paris	2,871,039
Osaka	2,453,573
Buenos Aires	2,153,200
Tokio	2,070,913
Moscow	2,025,947
Philadelphia	1,950,961
Vienna	1,868,328
Leningrad	1,614,008
Detroit	1,568,662
Shanghai	1,539,000
Hankow	1,500,000
Calcutta	1,383,898
Peking (Peiping)	1,297,719
Sydney	1,253,560
Los Angeles	1,238,048
Rio de Janeiro	1,157,873
Bombay	1,157,851
Glasgow	1,088,417
Warsaw	1,086,305
Hamburg	1,079,092
Hong Kong	1,075,690

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